MHC-W55

SERVICE MANUAL

AEP Model
UK Model

- The MHC-W55 is composed of the models below. Service manuals are issued for each of the component models, so please refer to each of the manuals.

COMPONENTS MODEL

Amplifier / Tuner	STR-W55
Cassette Deck / CD Player	HCD-W55

SPECIFICATIONS

Destination	Power requirements	Power consumption
AEP, G, IT, AED model	220V–230V AC, 50/60Hz	160W
UK model	220V–240V AC, 50/60Hz	160W

Design and specifications are subject to change without notice.

- Abbreviation
  G : German IT : Italian
  AED : Norway, Sweden, Finland, Denmark

- PARTS LIST

NOTE :
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref.No	Part No.	Description	Remark
	1-473-463-11	REMOTE COMMANDER (RM-SW55)	
	1-501-721-11	ANTENNA (LOOP)	
	1-501-804-11	ANTENNA, FM	
	1-776-017-11	CORD (WITH CONNECTOR) (17P)	
	1-776-018-11	CORD (WITH CONNECTOR) (7P)	
	3-800-829-31	MANUAL, INSTRUCTION (ENGLISH) (UK)	
	3-800-829-41	MANUAL, INSTRUCTION (ENGLISH/FRENCH/SPANISH/PORTUGUESE) (AEP)	
	3-800-829-51	MANUAL, INSTRUCTION (GERMAN/DUTCH/ITALIAN) (AEP, IT)	
	3-800-829-61	MANUAL, INSTRUCTION (GERMAN) (G)	
	3-800-829-71	MANUAL, INSTRUCTION (DANISH/FINNISH/SWEDISH) (AED)	
	4-941-762-11	COVER (MLY), BATTERY (for RM-SW55)	
*	4-979-069-01	CUSHION (STR) (FRONT)	
*	4-979-070-01	CUSHION (STR) (REAR)	
*	4-979-071-01	CUSHION (HTC) (FRONT)	
*	4-979-072-01	CUSHION (HTC) (REAR)	
*	4-980-778-01	INDIVIDUAL CARTON (HCD)	
*	4-980-779-01	INDIVIDUAL CARTON (STR)	

MINI Hi-Fi COMPONENT SYSTEM

SONY®

MICROFILM
9-960-443-31

Sony Corporation
Consumer A&V Products Company
Home A&V Products Div.

English
96B0458-1D
Printed in Japan
© 1996.2
Published by Home A&V Products Div. Quality Engineering Dept.

STR-W55

SERVICE MANUAL

AEP Model
UK Model

STR-W55 is RECEIVER section in MHC-W55.

SPECIFICATIONS

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range 87.5 – 108.0 MHz (50 kHz step)
Aerial FM lead aerial
Aerial terminals 75 ohm unbalanced
Intermediate frequency 10.7 MHz

AM tuner section

Tuning range
German, Italian model :
AM: 531 – 1,602 kHz (with the interval set at 9 kHz)
EXCEPT German, Italian model :
MW: 531 – 1,602 kHz (with the interval set at 9 kHz)
LW: 153 – 279 kHz (with the interval set at 3 kHz)
Aerial AM loop aerial, External aerial terminals
Intermediate frequency 450 kHz

Amplifier section

DIN power output
50 + 50 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output
60 + 60 watts (6 ohms at 1kHz, 10% THD)
Music power output
210 watts (6 ohms at 1kHz, 10% THD)
Inputs
MD IN (phono jacks): voltage 450 mV, impedance 47 kilohms
MIX MIC (phone jacks): sensitivity 1 mV, impedance 10 kilohms
Outputs
MD OUT (phono jacks): voltage 250 mV impedance 1 kilohms
PHONES (stereo phone jack): accepts headphones of 8 ohms or more.
FRONT SPEAKER: accepts impedance of 6 to 16 ohms.
SURROUND SPEAKER: accepts impedance of 16 ohms.

– Continued on page 2 –

MICROFILM

FM STEREO/FM-AM RECEIVER

SONY®

Supplied accessories
AM loop aerial (1)
Remote RM-SW55 (1)
Sony SUM-3 (NS) batteries (2)
FM lead aerial (1)
Flat cords (2)
Speaker cords (2)

General
Power requirements
220-230V AC, 50/60Hz (EXCEPT UK)
220-240V AC, 50/60Hz (UK)
Power consumption
160 watts
Dimensions
Amplifier/Tuner section:
Approx. 280 x 205 x 345 mm
(11 x $8^{1}/_{16}$ x $13^{9}/_{16}$ inches)
(w/h/d) incl. projecting parts
and controls
Mass
Amplifier/Tuner section:
Approx. 5.5 kg (12 lbs. 2 oz.)
Design and specifications are subject to change without notice.

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Section	*Title*	*Page*
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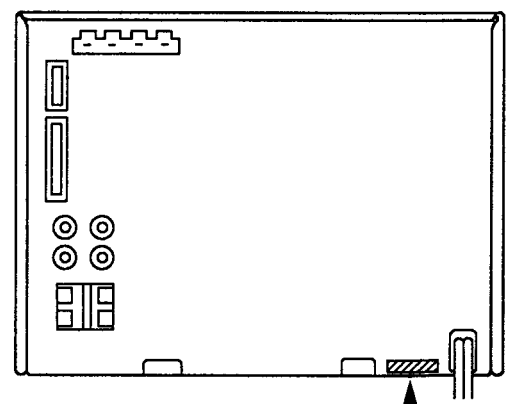
MODEL INDENTIFICATION
– BACK PANEL –



Parts No.	Model
4-978-033-6□	UK
4-978-033-2□	AEP, German, Italian, AED

● Abbreviation
AED : Norway, Sweden, Finland, Denmark

Notes on chip component replacement
• Never reuse a disconnected chip component.
• Notice that the minus side of a tantalum capacitor may be damaged by heat.

SAFETY-RELATED COMPONENT WARNING!!

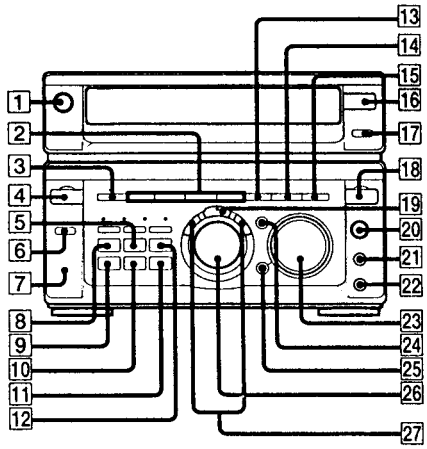
COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Front Panel

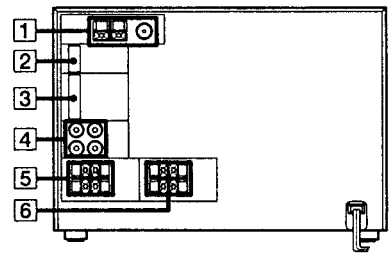
Amplifier/Tuner section



1 SYSTEM POWER button
2 MENU 1-4 buttons
3 EFFECT ON/OFF button
4 TIMER button
5 PTY button
6 SLEEP button
7 KARAOKE PON/MPX button
8 TUNER MEMORY button
9 CLOCK SET button
10 TIMER SET button
11 TIMER SELECT button
12 TUNING MODE button
13 P FILE button
14 MEMORY button
15 SURROUND button
16 TUNER/BAND button
17 DISPLAY button
18 FUNCTION button
19 ENTER/NEXT button
20 MIC LEVEL control
21 MIX MIC jack
22 PHONES jack
23 VOLUME control
24 DBFB button
25 GROOVE button
26 JOG dial
27 FREQUENCY +/– buttons

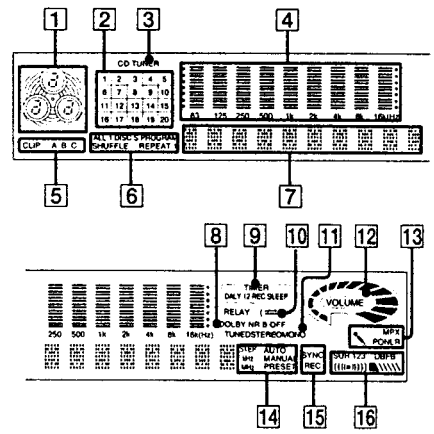
Rear panel

Amplifier/Tuner section



1 ANTENNA terminals
2 SYSTEM CONTROL 2 terminal
3 SYSTEM CONTROL 1 terminal
4 MD IN/OUT jacks
5 FRONT SPEAKER connectors
6 SURROUND SPEAKER connectors

Display Window



1 Disc tray indicator
2 Music calendar
3 CD/TUNER indicator
4 Graphic Equalizer indication
5 CLIP indicators
6 CD playback indicators
7 Multi-display
8 DOLBY NR indicator
9 Timer indicators
10 Direction mode indicators
11 Tuning indicators
12 VOLUME indicators
13 Karaoke PON/MPX indicators
14 Tuner indicators
15 SYNC REC indicator
16 DBFB/SUR indicators

SECTION 2
TEST MODE

DISPLAY / KEY TEST MODE

Press the ENTER/NEXT and FUNCTION buttons simultaneously.
Then press the MENU 1 button with the following 4 seconds to set the Test Mode.

1. The message "W1 J (destination) " appears on the screen and a 32 cycle square wave of the subcrystal oscillator is output from Pin 24 (AUB. OUT).
2. Press any key to rotate JOG and all FL indicators light up.
   When you rotate JOG at this point, the display changes as follows.
   ← all FL indicators on ←→ FL pattern 1 ←→ FL pattern 2 →
   The changes and all LED indicators light up.
3. Again press any key to set the key count check. The following display appears.
   0 0 0
   The numbers in order from left to right show ; the number of keys pressed, the JOG count (1 click per 4 counts), and the VOL count. (1 cycle is a count of 96.)
4. Press the Power button to reset to the factory settings.

AMP TEST MODE

Press the ENTER/NEXT and FUNCTION buttons simultaneously.
Then press the MENU 2 button with the following 4 seconds to set the Test Mode.

1. The message "AMP TEST" appears on the screen. Press the MENU button to call up the Equalizer Curve for the Amp Test. However when the function is set to the tuner, use the MENU button to call up each tuner preset from 1 through 5.
2. Press the Power button to reset to the factory settings.

MICROCOMPUTER COLD START

Press the ENTER/NEXT and FUNCTION buttons simultaneously.
Then press the MENU 3 button with the following 4 seconds to reset the microcomputer to the factory settings.

SUBCRYSTAL TEST MODE

Press the ENTER/NEXT and FUNCTION buttons simultaneously.
Then press the MENU 4 button with the following 4 seconds.
The message "XTAL TEST " appears on the screen and a 32 cycle square wave of the subcrystal oscillator is output from Pin 24 (AUB.OUT).
In addition, a square wave of the same frequency as the subcrystal oscillator, is output from 4PIN (POWER. ON/OFF).
Press the Power button to reset to the factory settings.

SECTION 3
ELECTRICAL ADJUSTMENTS

Precautions in Repairing

Note. 1 : The adjustment should be performed in the publication. (AM →FM)

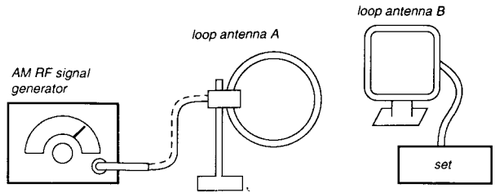
Note. 2 : As a front-end (FE1) is difficult to repair if faulty, replace it with new one.

AM SECTION

AM Tuned Indication Lighting Level

Setting :

Band :AM (MW)



Carrier frequency : 999kHz

Procedure :

1. Set loop antenna A so that the loop antenna B input level becomes 55dBμ/m (0.6mV/m).
2. Tune the set to 999kHz .
3. Adjust RV41 so that the TUNED indicator goes on.

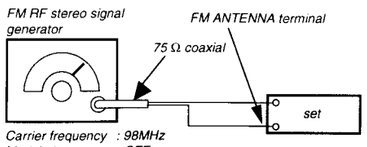
FM SECTION

FM Tuned Indication Lighting Level

Note : Always make the tuning level adjustment first. (Since it affects the FM tuning level.)

Setting :

Band : FM



Carrier frequency : 98MHz
Modulation : OFF
Output level :0.018mV (25dBμ)

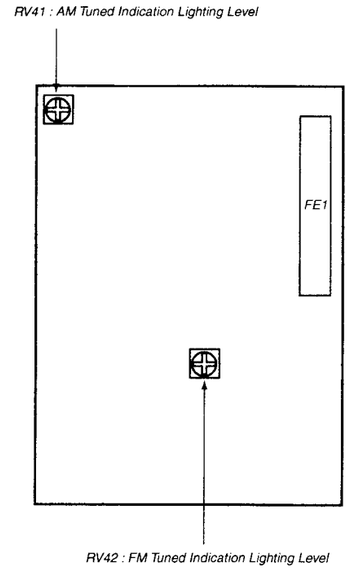
Procedure :

1. Tune the set to 98MHz.
2. Adjust RV42 so that the TUNED indicator goes on.

Adjustment Location : TCB board

Adjustment Location :

[TCB BOARD] – Component side –



SECTION 4
EXPLANATION OF IC TERMINALS

IC501 1 ASD0204GF-011-3BA (SYSTEM CONTOROL)

Pin No.	Pin name	I/O	Description
1	V_{DD}	–	Power supply.
2	CLK OUT	O	Direct output for communications with HCD-W55.
3	RDY IN	I/O	Direct input / output for communications with HCD-W55.
4	POWER ON / OFF	O	L : Relay ON
5	MUTE	O	Mute output to transistor. L : Mute ON
6,7	–	–	Not used.
8	427LAT	O	Latch output to IC105 (M62427FP).
9	LED LAT	O	Latch output to IC504 (M66313FP).
10	RESET	I	Reset terminal.
11	X2	–	Oscillator connection terminal. (5MHz)
12	X1	–	Oscillator connection terminal. (5MHz)
13	IC	–	Ground connection.
14	XT2	–	Oscillator connection terminal. (32MHz)
15	XT1	–	Oscillator connection terminal. (32MHz)
16	V_{DD}	–	Power supply.
17	BACK UP	I	AC Power supply OFF.
18	COM CLK	O	Transfer clock output serial data.
19	COM DATA	O	Serial data output.
20	ST DATA IN	I	Serial data input from IC 1.
21	ST CE	O	Chip enable output to IC 1.
22	STEREO	I	Stereo signal input.
23	TUNED	I	Tuned signal input.
24	AUB OUT	O	Audio bus output.
25	AV_{SS}	–	Ground.
26	–	–	Not used.
27	SUFFIX	I	Input for model select.
28	SPE	I	Spectrum analyzer signal input.
29	SPE	I	Spectrum analyzer signal input.
30	SPE	I	Spectrum analyzer signal input.
31	SPE	I	Spectrum analyzer signal input.
32	KYE 1	I	Key data input (A/D converter).
33	KYE 2	I	Key data input (A/D converter).
34	AV_{DD}	–	Power supply for anlog.
35	AV REF	–	Reference voltage for A/D converter.
36	VOL IN A	I	Volume encoder input.
37	JOG IN A	I	JOG dial encoder input.
38	RDS CLK	I	Not uset.
39	AUB IN	I	Audio bus output.
40	V_{SS}	–	Ground.

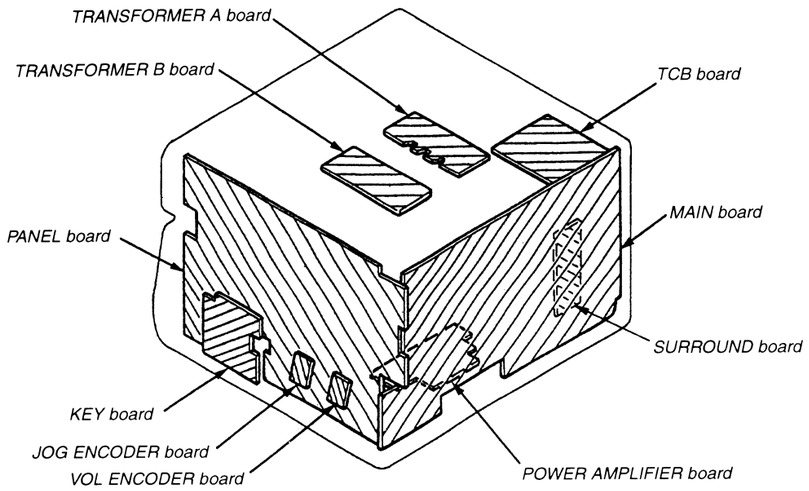
Pin No.	
41	
42	
43	
44	
45	
46	
47	
48	
49	
50	
51	
52	
53	
57 – 78	
79	
80 – 86	
87 – 100	

Pin No.	Pin name	I/O	Description
41	RDS DATA	I	Not uset.
42	D 3	I/O	System control data signal input / output.
43	D 2	I/O	System control data signal input / output.
44	D 1	I/O	System control data signal input / output.
45	D 0	I/O	System control data signal input / output.
46	V_{DD}	–	Power supply +5V.
47	SIRCS IN	I	SIRCS signal input.
48	VOL IN B	I	Volume encoder input.
49	JOG IN B	I	JOG dial encoder input.
50	ST FM	O	BAND select output.
51	ST MUTE	O	
52	EMG OUT	O	Urgent signal standby output. "H" : standby
53	EMG IN	I	Urgent signal start input. "H" → "L" : start
57 – 78	P 32 – P 8	O	Segment output to FL501.
79	VG	–	Power supply for fluorescent indicator tube.
80 – 86	P 7 – P 1	O	Segment output to FL501.
87 – 100	14 G – 1 G	O	Grid output for FL501.

	FM Receiving	AM Receiving	MUTE
⑤⓪ pin	H	L	H
⑤① pin	L	L	H

SECTION 5
DIAGRAMS

• CIRCUIT BOARDS LOCATION



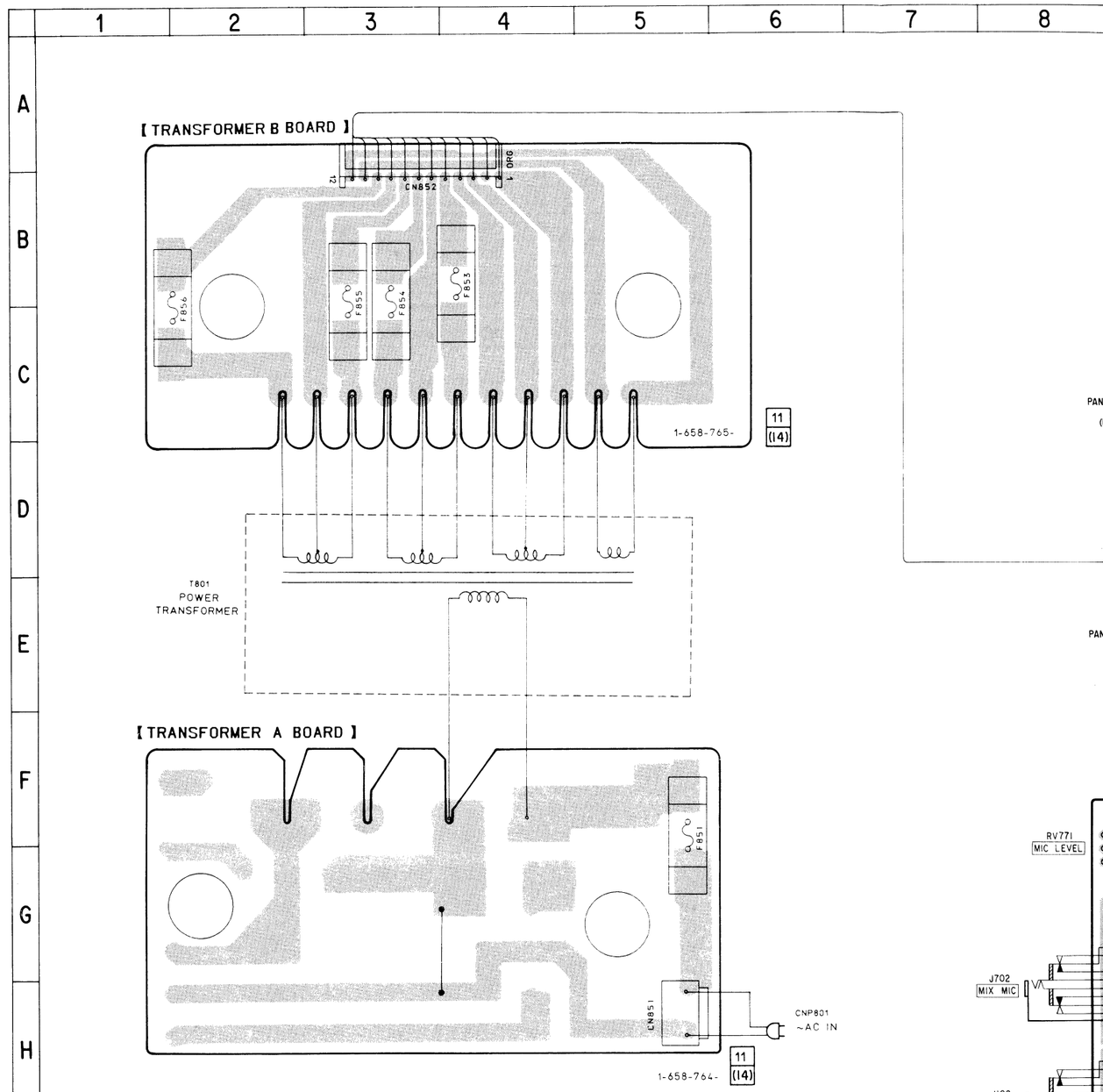
• SEMICONDUCTOR LOCATION

Ref. No.	Location
D701	B-15
D702	B-15
D801	F-11
D804	F-9
D805	B-13
D807	C-11
D808	C-13
D809	E-12
D810	E-12
D811	E-11
D812	E-11
D813	E-11
D814	E-11
D821	H-16
D824	C-11
D840	G-16
D841	H-18
D852	H-18
D903	I-14
D953	I-14
D1031	G-14
IC101	E-15
IC105	F-17
IC107	D-14
IC701	D-18
IC770	G-10
IC801	C-14
IC850	G-17
IC901	J-14
IC7001	C-18
IC7002	B-18
Q106	C-11
Q190	E-14
Q191	E-13
Q192	F-14
Q801	F-10
Q802	C-12
Q804	C-11
Q805	C-15
Q810	G-16
Q856	G-17
Q857	G-16
Q901	I-15
Q902	I-14
Q952	J-15
Q1001	E-14
Q1051	F-13

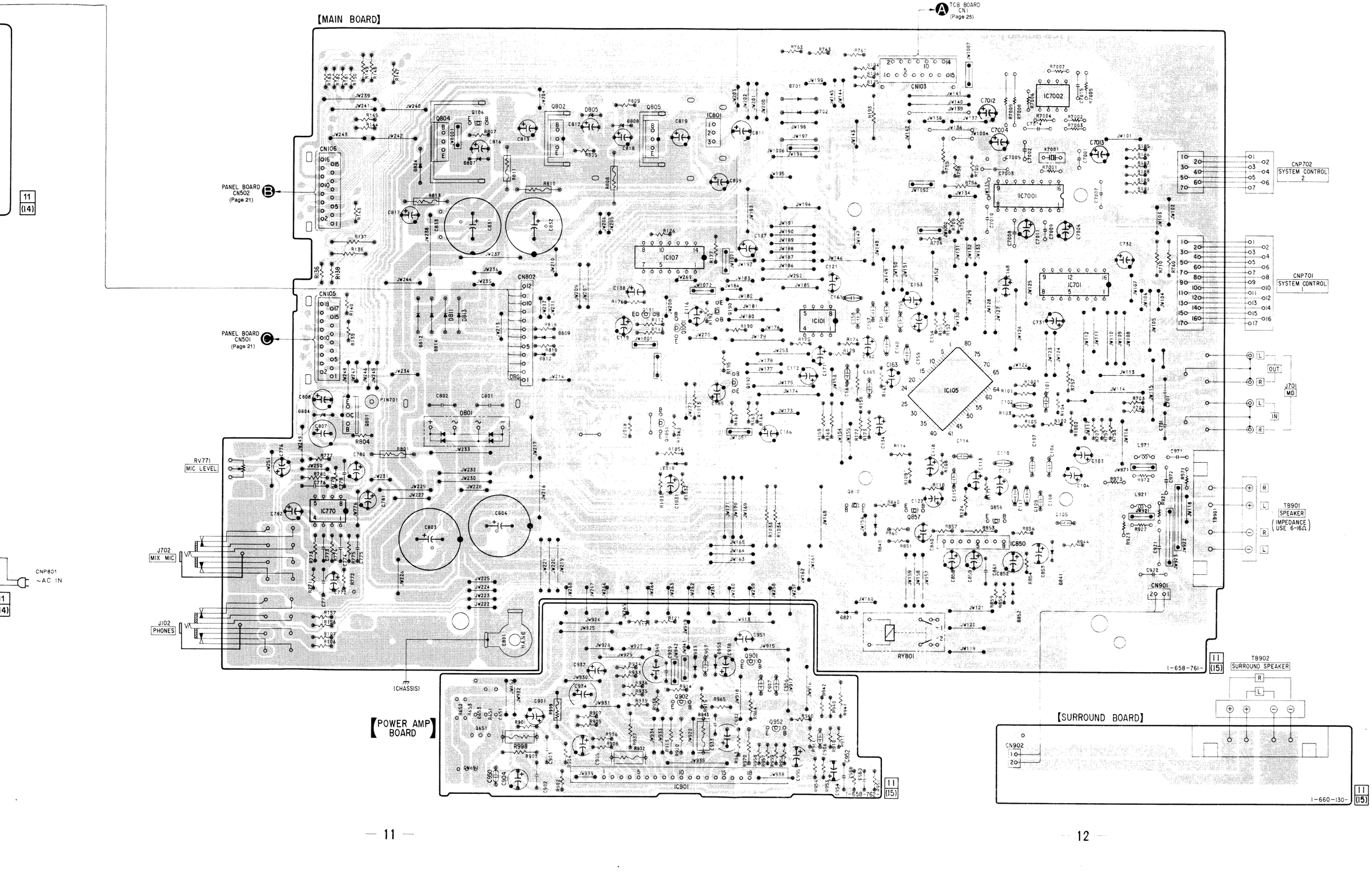
Note:

- ○— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.
- Abbreviation
  - G : German
  - IT : Italian
  - AED : Norway, Sweden, Finland, Denmark

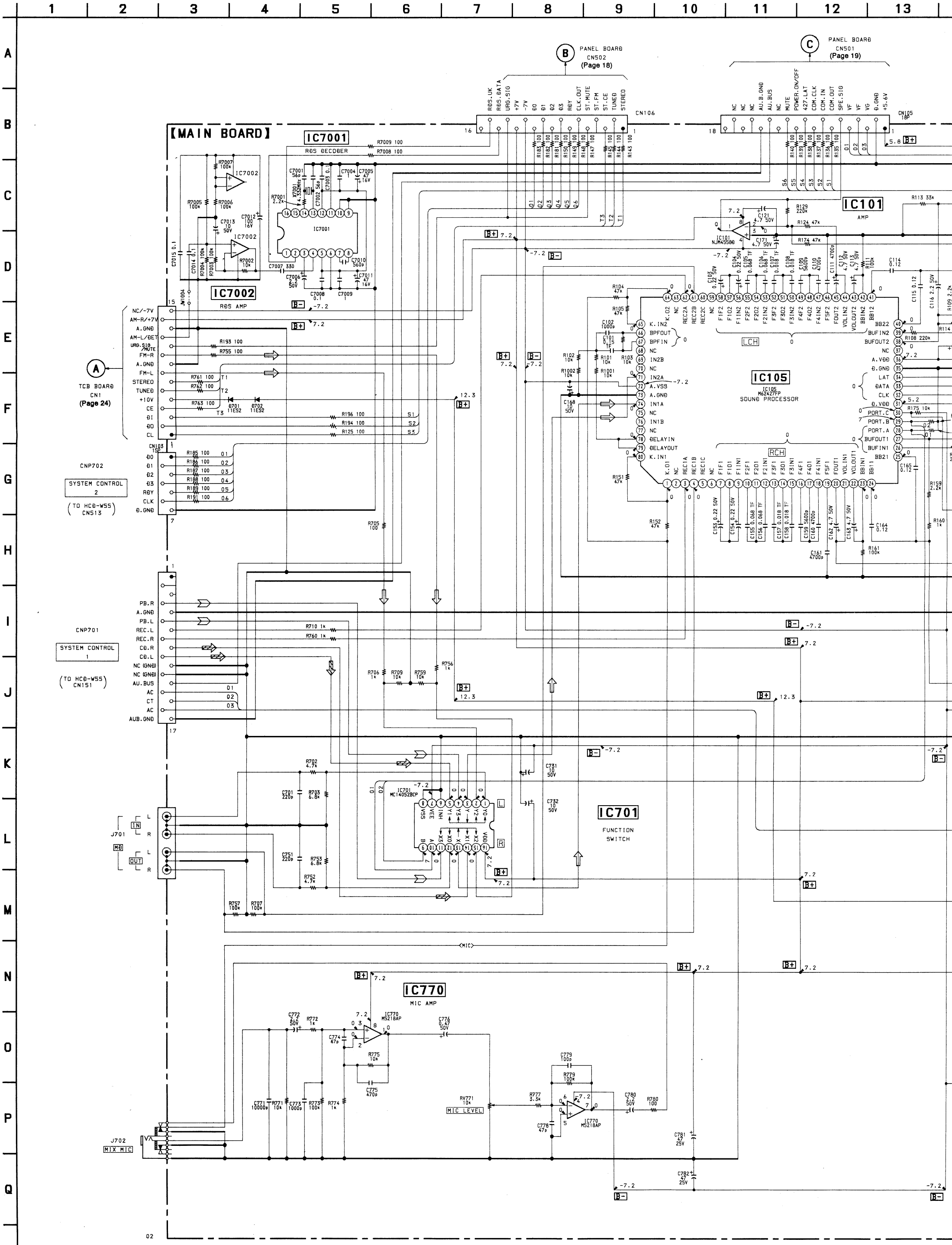
5-1. PRINTED WIRING BOARDS –MAIN SECTION–



【MAIN BOARD】


TCB BOARD CN1 (Page 25)
PANEL BOARD CN502 (Page 21)
PANEL BOARD CN501 (Page 21)
CNP801 ~AC IN
J702 MIX MIC
J102 PHONES
RV771 MIC LEVEL
(CHASSIS)
CNP702 SYSTEM CONTROL 2
CNP701 SYSTEM CONTROL 1
J701 MD
OUT
IN
TB901 SPEAKER (IMPEDANCE USE 6-16Ω)
TB902 SURROUND SPEAKER
CN901
CN902
RY801
IC7002
IC7001
IC701
IC105
IC101
IC107
IC770
IC850
IC801
IC901
CN103
CN106
CN105
CN802
【POWER AMP BOARD】
【SURROUND BOARD】
I-658-761-
I-658-762-
I-660-130-

● Refer to page 17 for IC Block Diagrams.



NEL BOARD
CN501
age 19)

【POWER AMP BOARD】

IC901
STK-4152MK2K
POWER AMP

IC101
AMP

IC107
ÐBFB SW
IC107 MC14066BCP

IC850
PROTECTOR
IC850 μPC1237HA

IC801
REG
IC801 M5F7812

Q191 2SC3622 MUTING
Q192 2SC3622 MUTING
Q190 2SA1348 MUTE SWITCH
Q1001 2SC2603 BASS BOOST SWITCH
Q1051 2SC2603 BASS BOOST SWITCH
Q810 2SC3402 POWER SWITCH
Q857 2SA1346 OVER LOAÐ ÐET
Q856 2SC3399 STANÐBY SWITCH
Q902, 952 OVER LOAÐ ÐET
Q901 2SC3402 POWER SWITCH
Q902 2SC1841
Q952 2SC1841
Q802 2SB2012 +7V REG
Q805 2SB1375 -7V REG
Q804 2SB2012 +5V REG
Q106 2SC2603 REG SWITCH
Q801 2SB1375
ÐB01 RBV-602
ÐB04 UZ-27BSB -B REG
ÐB07 UZ-6.8BSC
ÐB05 UZ-7.5BS
ÐB08 UZ-7.5BS
ÐB24 11ES2
ÐB12 11E2
ÐB11 11E2
ÐB14 11E2
ÐB13 11E2
ÐB10 1N4148M
ÐB09 1N4148M
ÐB31 1M4148M
ÐB32 1N4148
ÐB33 1N4148M
ÐB40 1N4148M
ÐB41 1N4148M
ÐB21 1N4148M
ÐB03 1N4148M
ÐB52 1N4148
ÐB53 1N4148M

TA AC OFF
HEATSINK
(CHASSIS)
CN105 18P
CN802 12P

19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31

【POWER AMP BOARD】

IC901
STK-4152MK2K
POWER AMP

IC850
PROTECTOR

IC801
REG

【SURROUND BOARD】

【TRANSFORMER B BOARD】

【TRANSFORMER A BOARD】

TB901
SPEAKER
(IMPEDANCE USE 6-16Ω)

TB902
SURROUND SPEAKER

J102
PHONES

Q902, 952 OVER LOAD DET

Q901 2SC3402 POWER SWITCH

Q902 2SC1841

Q952 2SC1841

Q810 2SC3402 POWER SWITCH

Q857 2SA1346 OVER LOAD DET

Q856 2SC3399 STANDBY SWITCH

Q801 2SB1375

TA AC OFF

T801 POWER TRANSFORMER

RY801

(CHASSIS)

Note :

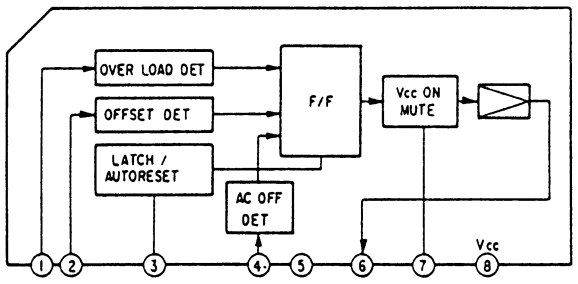
- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ : B+ Line
- B– : B– Line
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  : FM : PB (DECK A)
  : AM : CD
- Abbreviation
  G : German
  IT : Italian
  AED : Norway, Sweden, Finland, Denmark

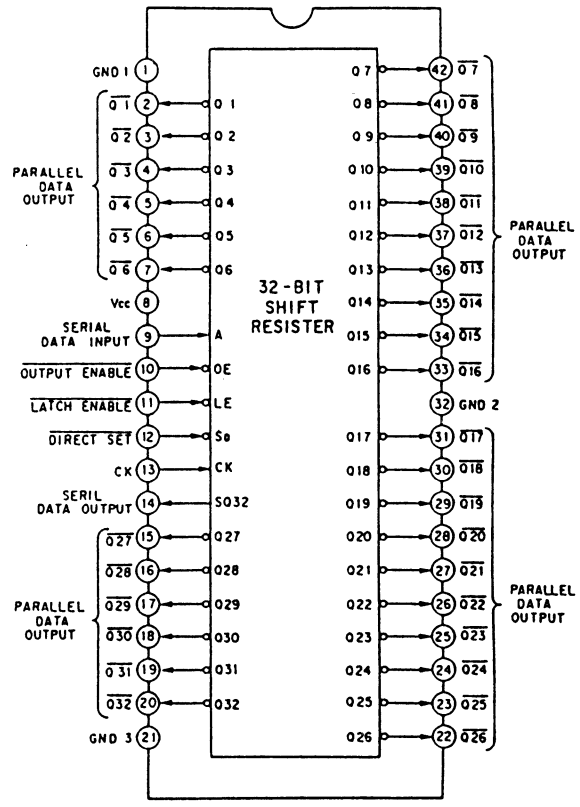
• IC BLOCK DIAGRAMS –MAIN SECTION–

IC850 µPC1237HA



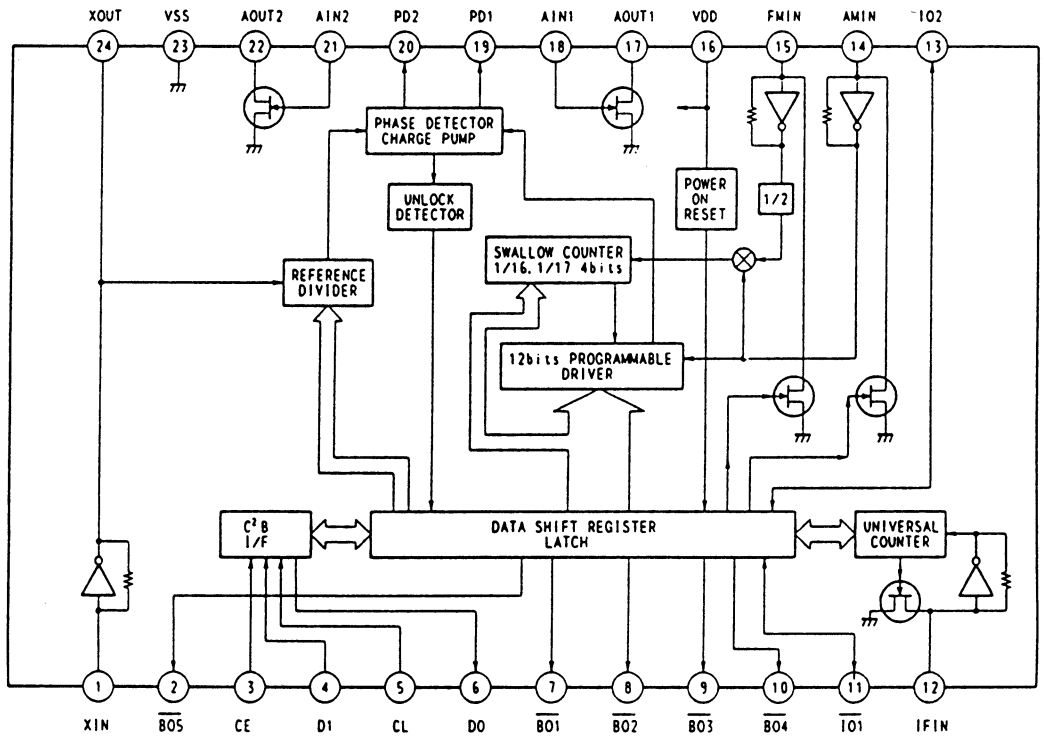
• IC BLOCK DIAGRAMS –PANEL SECTION–

IC504 M66313FP - 200C

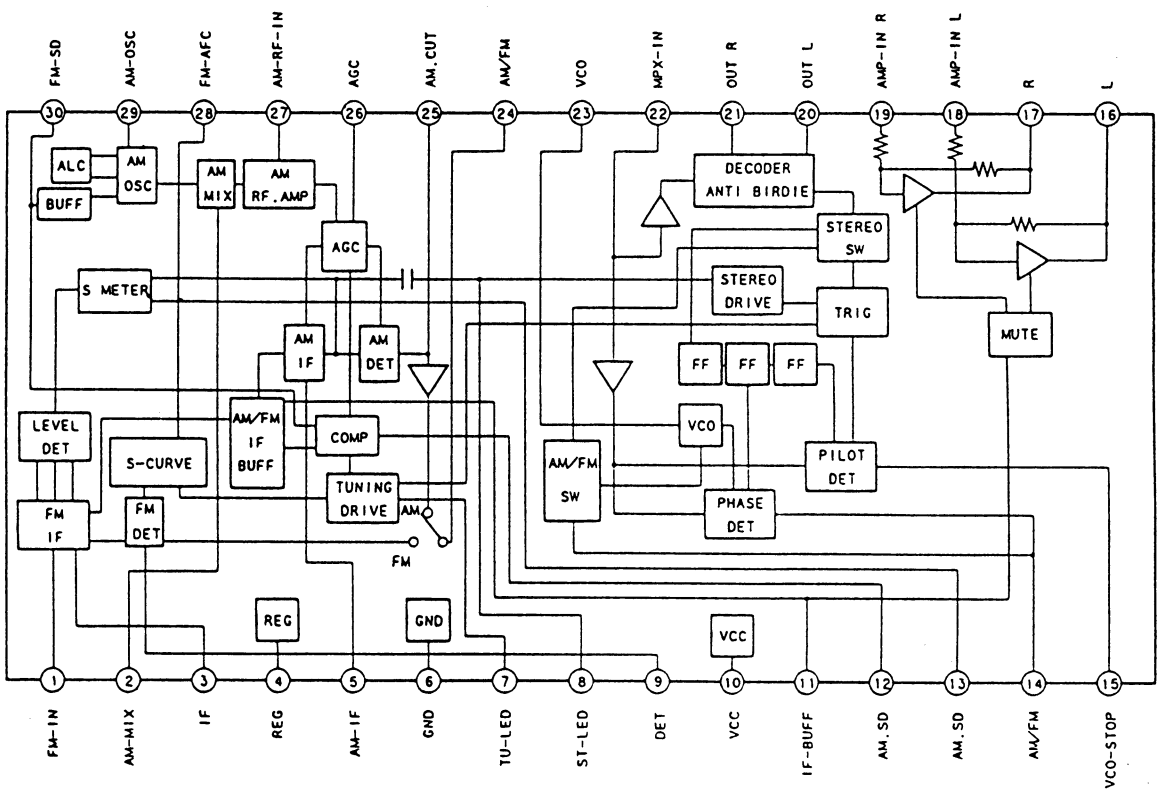


• IC BLOCK DIAGRAMS –TCB SECTION–

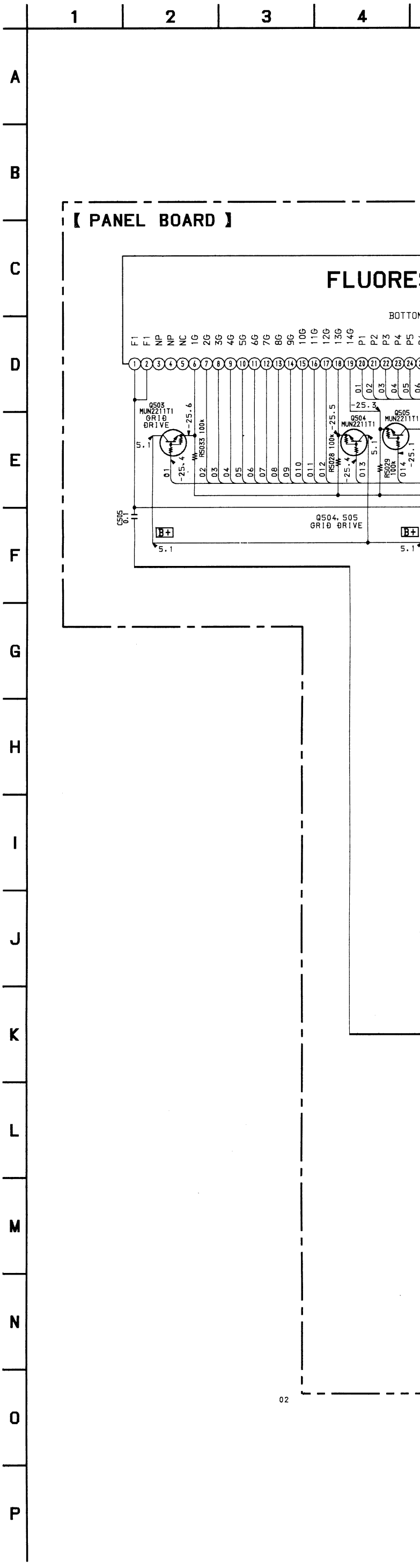
IC21 LC72130



IC41 LA1835



5-3. SCHEMATIC DIAGRAM –PANEL SECTION–



【JOG ENCODER BOARD】

【VOL ENCODER BOARD】

JOG ENCODER S551 (A B C) — JW501 JW502 JW503

VOL.ENCODER S552 (A B C) — JW504 JW505 JW506

FL501
FLUORESCENT LAMP
BOTTOM VIEW

IC502
IC502 GP1U27XB SIRCS
OUT VCC GND

IC501
IC501 AS00204GF-011 -3BA
SYSTEM CONTROL

IC503
IC503 PST600E
RESET

Q501 2SC2603 RESET
Q502 2SC2603 AU BUS BUFFER
Q504 MUN2211T1
Q505 MUN2211T1
Q506 MUN2211T1 SEGMENT DRIVE

X501 5.0MHz
X502 32KHz

R5031
AEP, UK, AEθ 10K
G, IT 6.8K

D556 UZ-6.8
D503 UZP-5.6BC

CN502 16P
CN501 18P

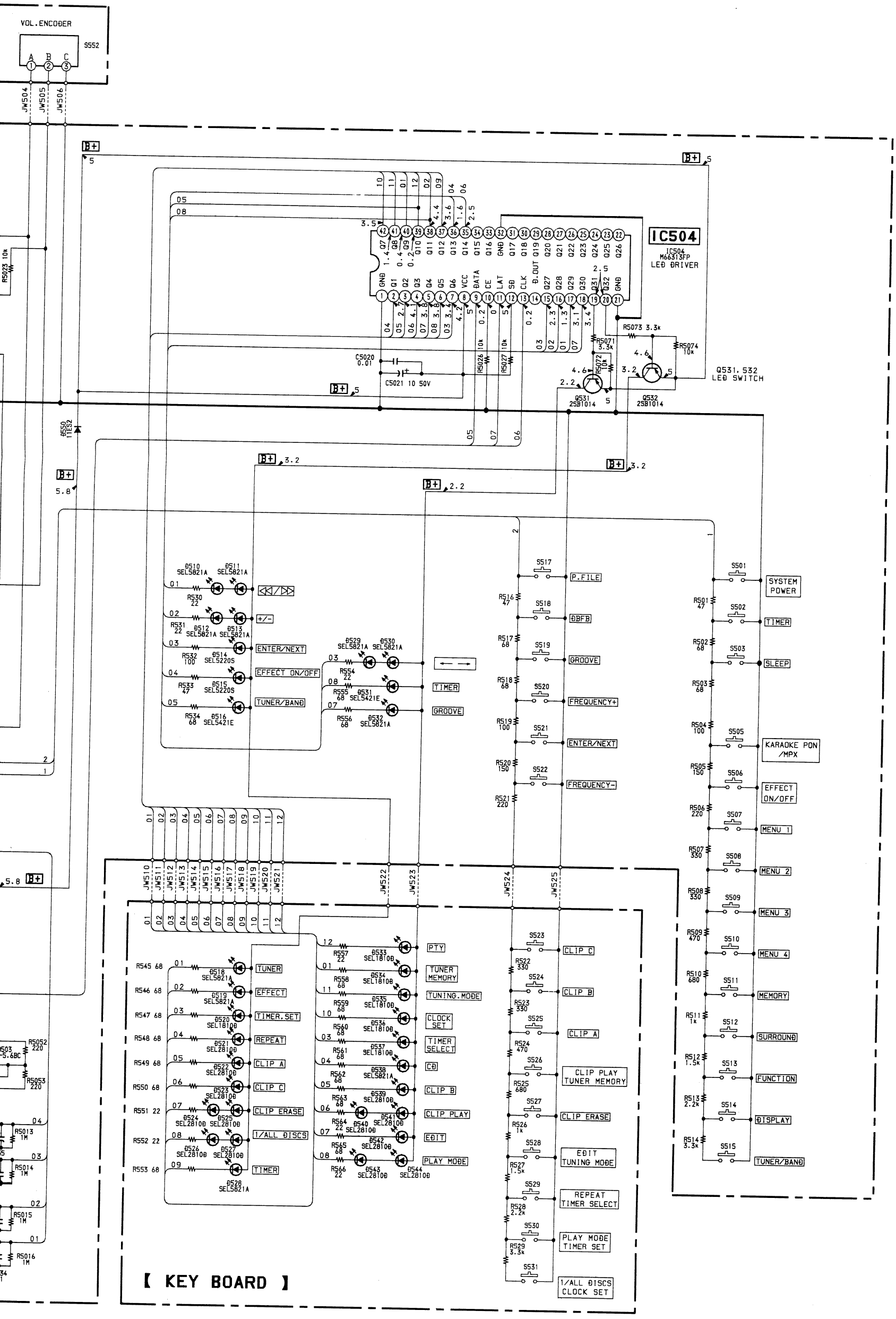
B MAIN BOARD CN106 (Page 14)
C MAIN BOARD CN105 (Page 14)

【 KEY BOARD 】

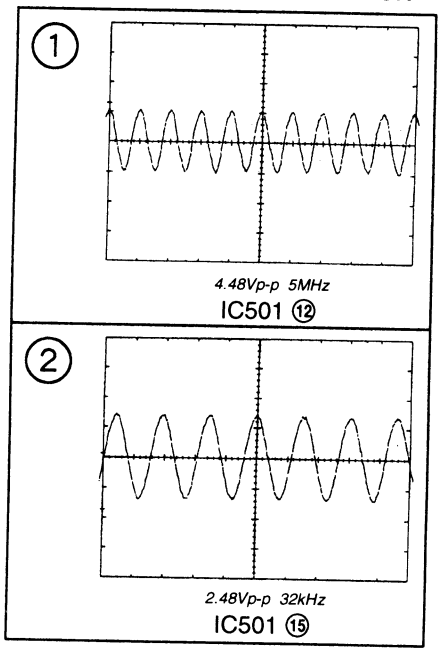
TUNER
EFFECT
TIMER.SET
REPEAT
CLIP A
CLIP C
CLIP ERASE
1/ALL DISCS
TIMER
ENTER/NEXT
EFFECT ON/OFF
TUNER/BAND
+/-

12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21

ENCODER BOARD]



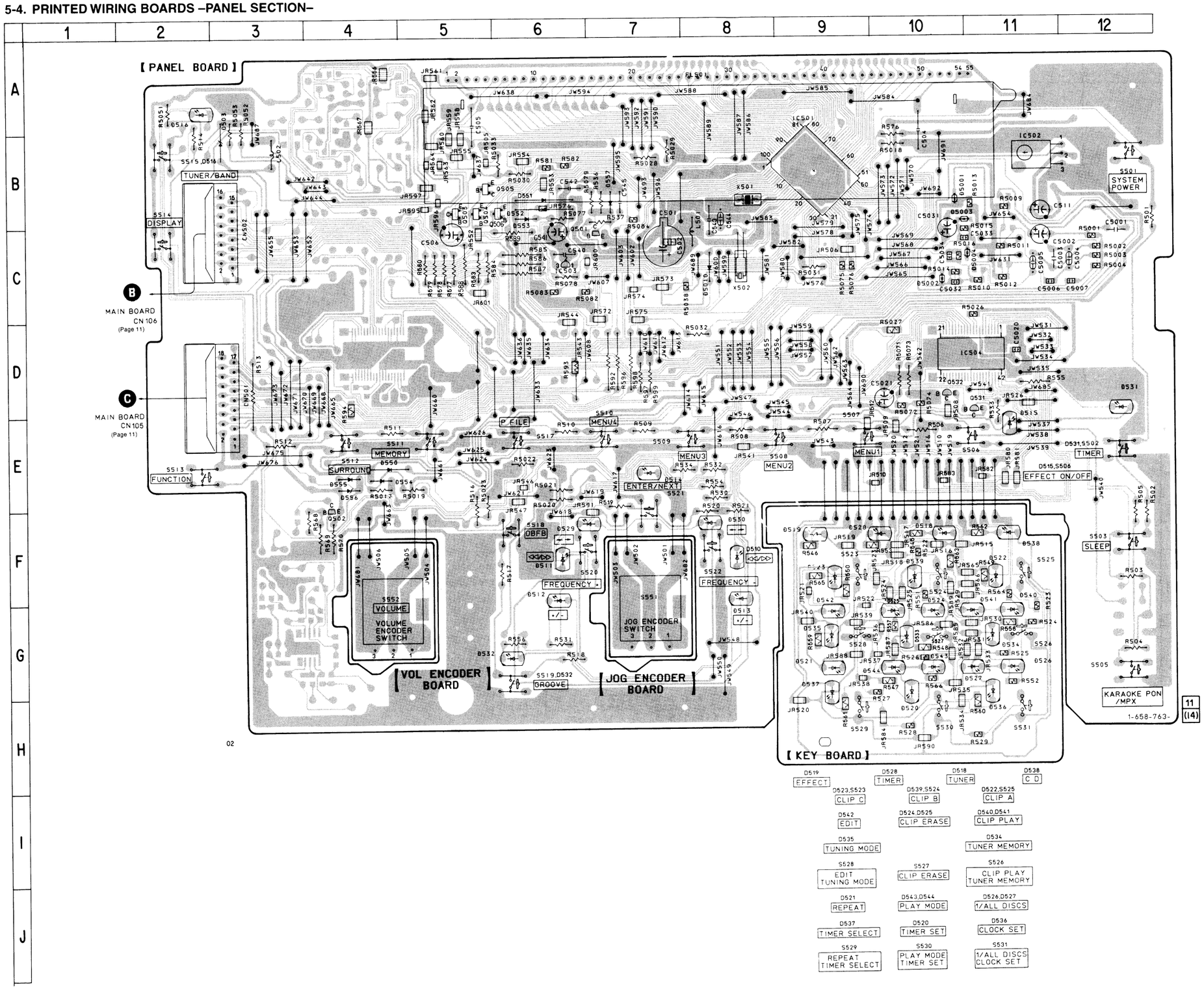
• WAVEFORMS – PANEL SECTION –



Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- Δ : internal component.
- B + : B+ Line
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  * : Can not measured
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Abbreviation
  G : German
  IT : Italian
  AED : Norway, Sweden, Finland, Denmark

5-4. PRINTED WIRING BOARDS –PANEL SECTION–



● SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location
D503	B-3	D550	E-4
D510	F-8	D551	B-6
D511	F-6	D552	C-6
D512	F-6	D553	C-6
D513	G-8	D554	E-4
D514	E-7	D555	E-4
D515	E-11	D556	E-4
D516	A-2	D557	B-7
D518	F-10	D5001	B-10
D519	F-9	D5002	C-10
D520	H-10	D5003	B-10
D521	G-9	D5004	C-11
D522	F-11	D5010	C-8
D523	F-9		
D524	G-10		
D525	G-10	IC501	B-9
D526	G-11	IC502	B-11
D527	G-11	IC503	C-6
D528	F-10	IC504	D-11
D529	F-6	Q501	C-7
		Q502	F-4
D530	F-8	Q503	B-5
D531	D-12	Q504	B-5
D532	G-6	Q505	B-5
D533	G-10		
D534	G-11	Q506	C-6
		Q531	D-11
D535	G-9	Q532	D-10
D536	G-11		
D537	G-9		
D538	F-11		
D539	F-10		
D540	G-11		
D541	G-11		
D542	G-9		
D543	G-10		
D544	G-10		

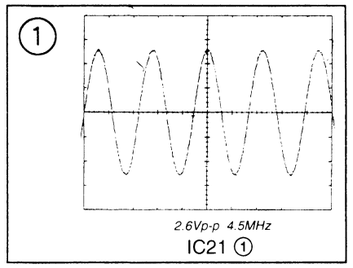
Note:

- ○— : parts extracted from the component side.
- ▨ : Pattern on the side which is seen.
- Abbreviation
  - G : German
  - IT : Italian
  - AED : Norway, Sweden, Finland, Denmark

5-5. SCHEMATIC DIAGRAM –TCB SECTION–

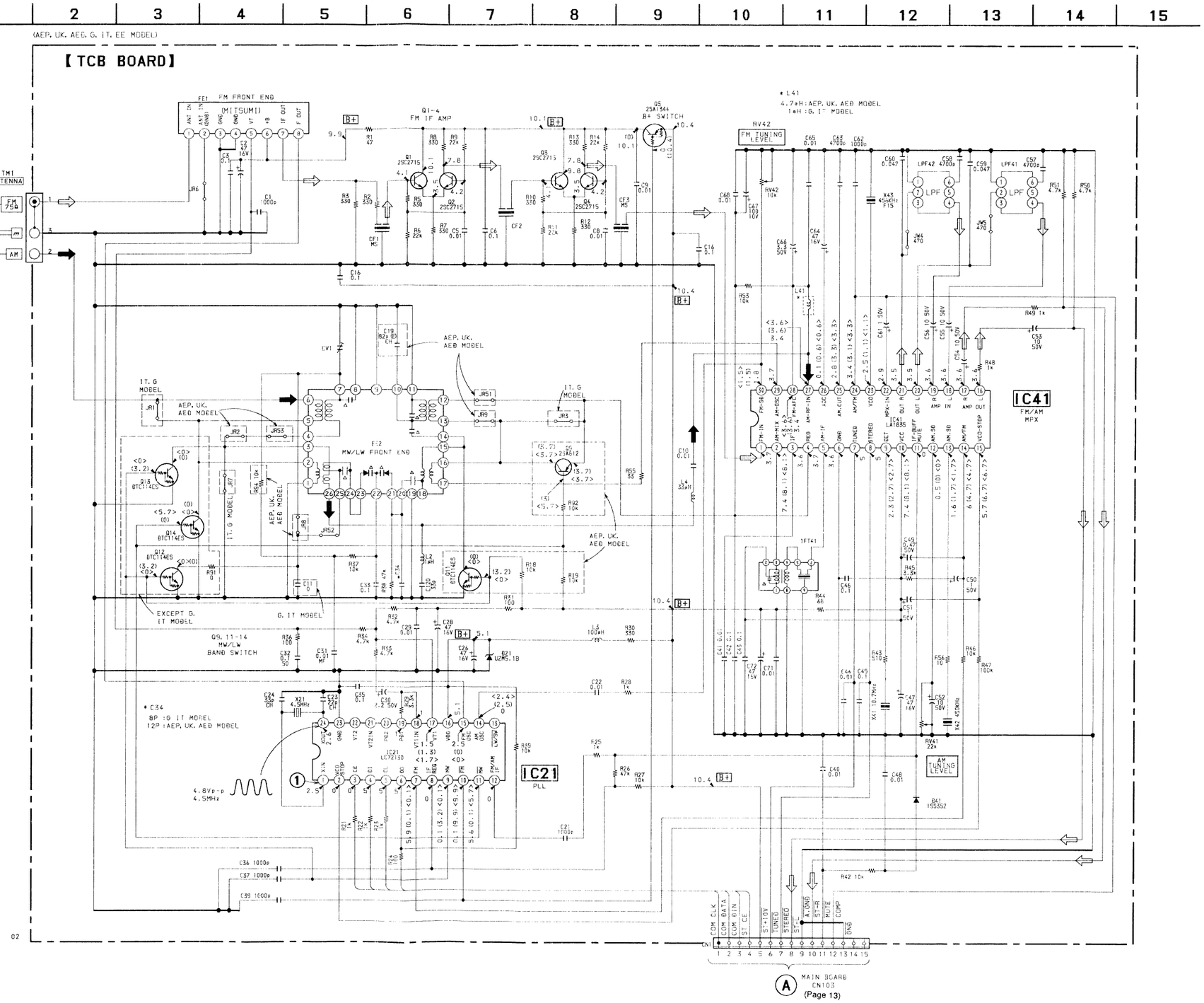
● Refer to page 17 for IC Block Diagrams.

● WAVEFORM – TCB SECTION –

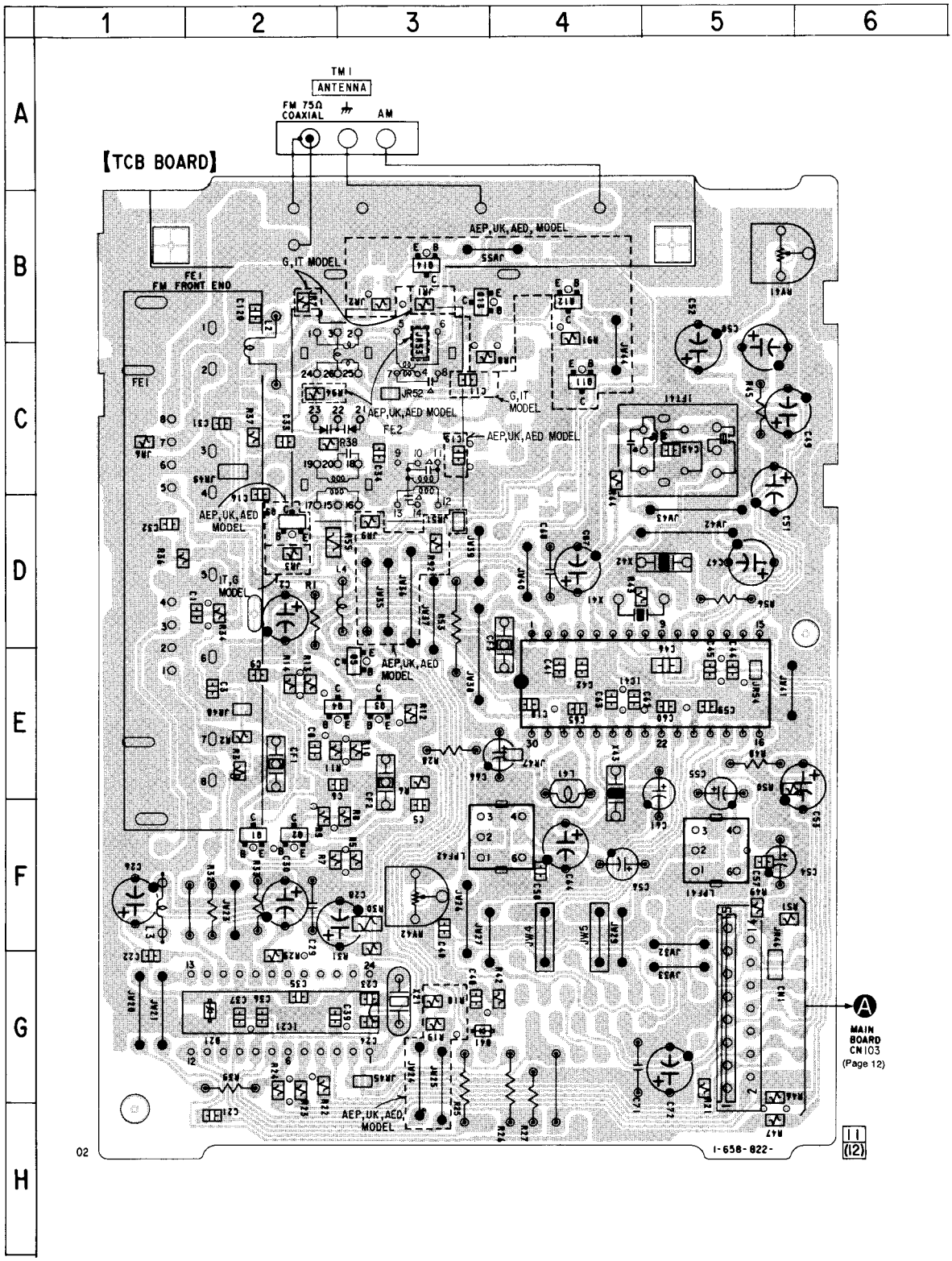


Note :

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- B+ : B+ Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM ➡ : AM
- Abbreviation
  G : German
  IT : Italian
  AED : Norway, Sweden, Finland, Denmark



5-6. PRINTED WIRING BOARDS –TCB SECTION–



• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D21	G-2	Q1	F-2	Q9	D-2
D41	G-3	Q2	F-2	Q11	C-4
		Q3	E-3	Q12	B-4
		Q4	E-2	Q13	B-3
IC21	G-2	Q5	E-3	Q14	B-3
IC41	E-4				

Note:

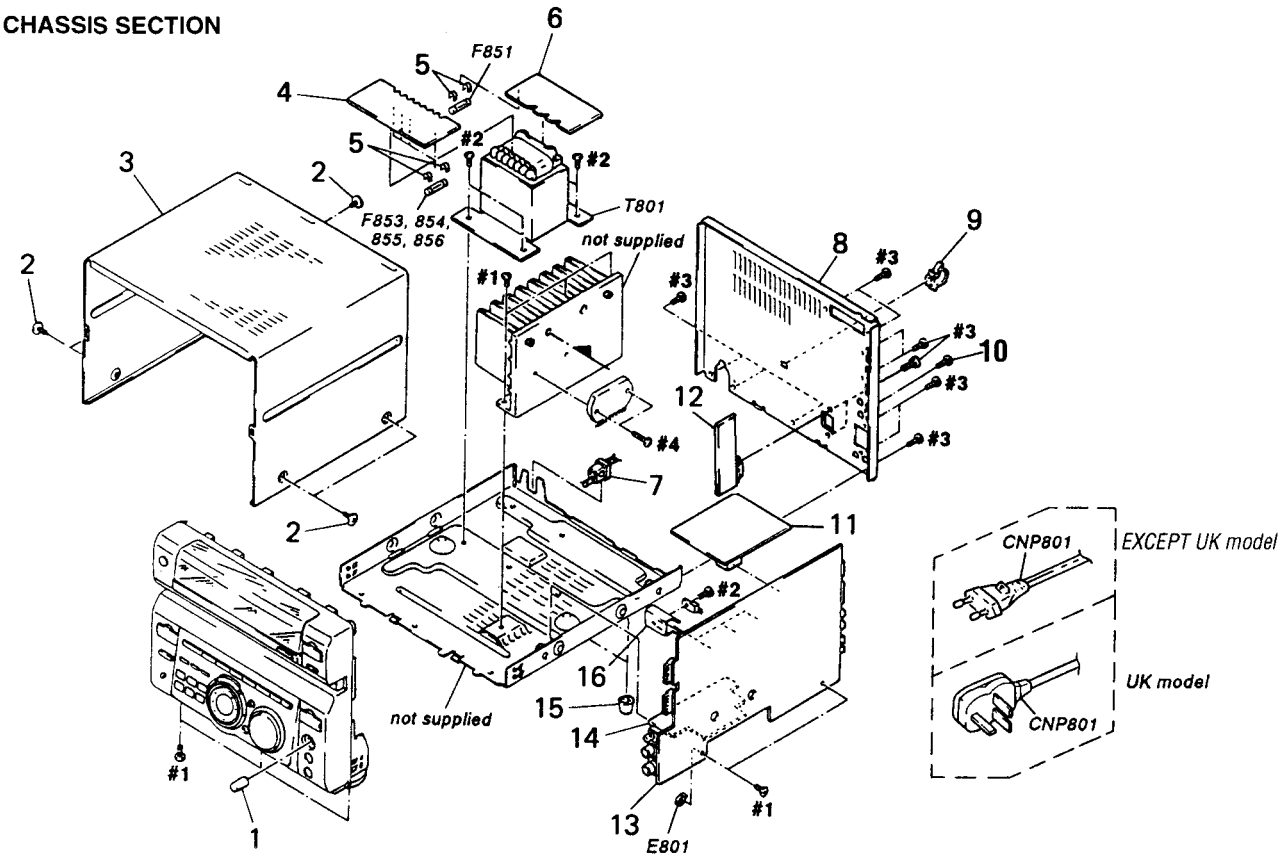
- ○— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.
- Abbreviation
  - G : German
  - IT : Italian
  - AED : Norway, Sweden, Finland, Denmark

SECTION 6
EXPLODED VIEWS

NOTE :
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  AED : Norway, Sweden, Finland, Denmark

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

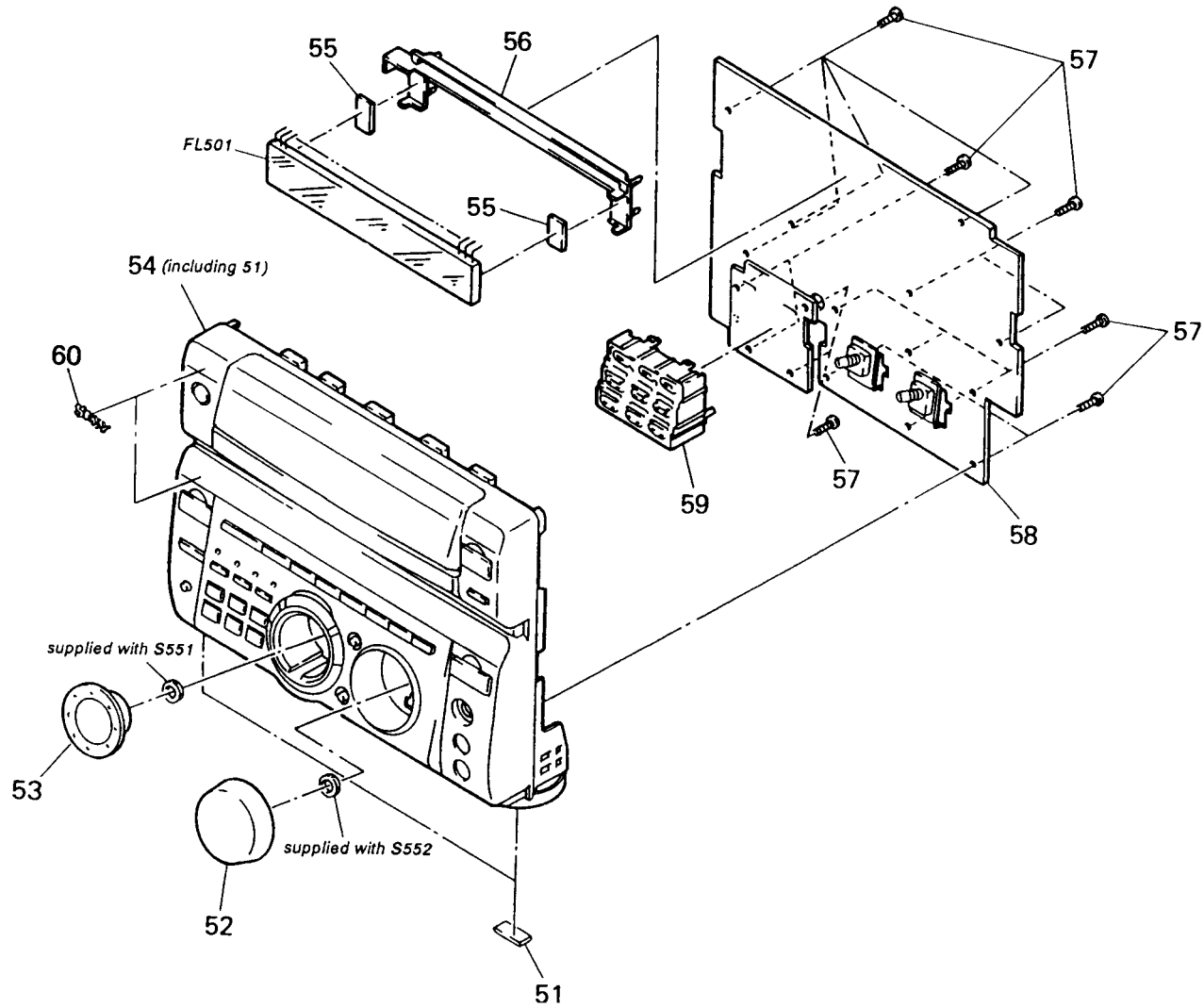
6-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	4-978-037-01	KNOB (M) (MIC LEVEL)	
2	3-704-366-01	SCREW (CASE) (M3X8)	
3	4-979-348-51	CASE	
* 4	1-658-765-11	TRANSFORMER B BOARD	
5	1-533-293-11	FUSE HOLDER	
* 6	1-658-764-11	TRANSFORMER A BOARD	
* 7	3-703-244-00	BUSHING (2104), CORD	
* 8	4-978-033-21	PLATE, JACK (EXCEPT UK)	
* 8	4-978-033-61	PLATE, JACK (UK)	
* 9	4-949-235-01	HOOK	
10	4-909-982-11	SCREW, TAPPIN	
* 11	A-4303-529-A	TCB BOARD, COMPLETE (AEP,AED,UK)	
* 11	A-4303-530-A	TCB BOARD, COMPLETE (German,Italian)	
* 12	1-660-130-11	SURROUND BOARD	
* 13	A-4389-333-A	MAIN BOARD, COMPLETE (EXCEPT UK)	
* 13	A-4389-340-A	MAIN BOARD, COMPLETE (UK)	

Ref. No.	Part No.	Description	Remark
* 14	A-4389-334-A	POWER AMPLIFIER BOARD, COMPLETE (EXCEPT UK)	
* 14	A-4389-341-A	POWER AMPLIFIER BOARD, COMPLETE) (UK)	
15	4-970-381-01	FOOT (REAR)	
* 16	4-880-403-11	HEAT SINK	
⚠ CNP801	1-574-805-11	CORD, POWER (EXCEPT UK)	
⚠ CNP801	1-696-570-21	CORD, POWER (UK)	
* E801	4-942-204-01	PLATE, GROUND	
⚠ F851	1-532-285-00	FUSE,TIME LAG (1.25A / 250V)	
⚠ F853	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ F854	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ F855	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ F856	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ T801	1-429-258-11	TRANSFORMER, POWER (EXCEPT UK)	
⚠ T801	1-429-643-11	TRANSFORMER, POWER (UK)	

6-2. FRONT CABINET SECTION



Ref. No.	Part No.	Description	Remark
51	4-930-336-21	FOOT (FELT)	
52	4-978-034-01	KNOB (V) (VOLUME)	
53	4-978-035-02	KNOB (J) (JOG)	
54	X-4946-749-1	PANEL ASSY, FRONT	
* 55	4-932-810-01	CUSHION (FL)	
* 56	4-971-014-01	HOLDER, FL TUBE	
57	4-951-620-01	SCREW (2.6X8), +BVTP	

Ref. No.	Part No.	Description	Remark
* 58	A-4389-330-A	PANEL BOARD, COMPLETE (AEP,AED)	
* 58	A-4389-335-A	PANEL BOARD, COMPLETE (German)	
58	A-4389-336-A	PANEL BOARD, COMPLETE (Italian)	
* 58	A-4389-337-A	PANEL BOARD, COMPLETE (UK)	
* 59	4-978-036-04	HOUSE, LAMP	
60	4-962-708-01	EMBLEM (4-A), SONY	
FL501	1-517-483-11	INDICATOR TUBE, FLUORESCENT	

MAIN

SECTION 7
ELECTRICAL PARTS LIST

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H
- Abbreviation
  AED : Norway, Sweden, Finland, Denmark

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-4389-333-A	MAIN BOARD, COMPLETE (EXCEPT UK)			
*	A-4389-340-A	MAIN BOARD, COMPLETE (UK)			
		**********			
*	4-880-403-11	HEAT SINK			
	7-682-548-04	SCREW +BVTT 3X8 (S)			
		< CAPACITOR >			
C101	1-136-167-00	FILM	0.15uF	5%	50V
C102	1-102-074-00	CERAMIC	0.001uF	10%	50V
C103	1-124-464-11	ELECT	0.22uF	20%	50V
C104	1-124-464-11	ELECT	0.22uF	20%	50V
C105	1-136-163-00	FILM	0.068uF	5%	50V
C106	1-136-163-00	FILM	0.068uF	5%	50V
C107	1-136-156-00	FILM	0.018uF	5%	50V
C108	1-136-156-00	FILM	0.018uF	5%	50V
C109	1-102-126-00	CERAMIC	0.0056uF	10%	50V
C110	1-101-003-00	CERAMIC	0.0047uF	50V	
C111	1-101-003-00	CERAMIC	0.0047uF	50V	
C112	1-126-963-11	ELECT	4.7uF	20%	50V
C113	1-126-963-11	ELECT	4.7uF	20%	50V
C114	1-136-166-00	FILM	0.12uF	5%	50V
C115	1-136-166-00	FILM	0.12uF	5%	50V
C116	1-126-961-11	ELECT	2.2uF	20%	50V
C118	1-124-907-11	ELECT	10uF	20%	50V
C119	1-126-963-11	ELECT	4.7uF	20%	50V
C121	1-126-963-11	ELECT	4.7uF	20%	50V
C122	1-124-903-11	ELECT	1uF	20%	50V
C134	1-124-907-11	ELECT	10uF	20%	50V
C137	1-124-907-11	ELECT	10uF	20%	50V
C138	1-124-907-11	ELECT	10uF	20%	50V
C153	1-124-464-11	ELECT	0.22uF	20%	50V
C154	1-124-464-11	ELECT	0.22uF	20%	50V
C155	1-136-163-00	FILM	0.068uF	5%	50V
C156	1-136-163-00	FILM	0.068uF	5%	50V
C157	1-136-156-00	FILM	0.018uF	5%	50V
C158	1-136-156-00	FILM	0.018uF	5%	50V
C159	1-102-126-00	CERAMIC	0.0056uF	10%	50V
C160	1-101-003-00	CERAMIC	0.0047uF	50V	
C161	1-101-003-00	CERAMIC	0.0047uF	50V	

Ref. No.	Part No.	Description			Remark
C162	1-126-963-11	ELECT	4.7uF	20%	50V
C163	1-126-963-11	ELECT	4.7uF	20%	50V
C164	1-136-166-00	FILM	0.12uF	5%	50V
C165	1-136-166-00	FILM	0.12uF	5%	50V
C166	1-126-961-11	ELECT	2.2uF	20%	50V
C168	1-124-907-11	ELECT	10uF	20%	50V
C169	1-126-963-11	ELECT	4.7uF	20%	50V
C171	1-126-963-11	ELECT	4.7uF	20%	50V
C172	1-124-903-11	ELECT	1uF	20%	50V
C701	1-162-286-31	CERAMIC	220PF	10%	50V
C731	1-124-907-11	ELECT	10uF	20%	50V
C732	1-124-907-11	ELECT	10uF	20%	50V
C751	1-162-286-31	CERAMIC	220PF	10%	50V
C771	1-162-306-11	CERAMIC	0.01uF	30%	16V
C772	1-126-961-11	ELECT	2.2uF	20%	50V
C773	1-162-294-31	CERAMIC	0.001uF	10%	50V
C774	1-162-215-31	CERAMIC	47PF	5%	50V
C775	1-162-290-31	CERAMIC	470PF	10%	50V
C776	1-124-902-00	ELECT	0.47uF	20%	50V
C778	1-162-215-31	CERAMIC	47PF	5%	50V
C779	1-162-282-31	CERAMIC	100PF	10%	50V
C780	1-126-961-11	ELECT	2.2uF	20%	50V
C781	1-124-477-11	ELECT	47uF	20%	25V
C782	1-124-477-11	ELECT	47uF	20%	25V
C801	1-164-159-11	CERAMIC	0.1uF		50V
C802	1-164-159-11	CERAMIC	0.1uF		50V
C803	1-126-974-11	ELECT	3300uF	20%	50V
C804	1-126-974-11	ELECT	3300uF	20%	50V
C807	1-126-968-11	ELECT	100uF	20%	35V
C808	1-126-967-11	ELECT	47uF	20%	35V
C809	1-124-907-11	ELECT	10uF	20%	50V
C811	1-104-665-11	ELECT	100uF	20%	16V
C812	1-104-664-11	ELECT	47uF	20%	10V
C813	1-104-664-11	ELECT	47uF	20%	10V
C816	1-104-664-11	ELECT	47uF	20%	10V
C817	1-104-664-11	ELECT	47uF	20%	10V
C818	1-104-664-11	ELECT	47uF	20%	10V
C819	1-104-664-11	ELECT	47uF	20%	10V

Ref. No.	Part No.	Description				Remark
C831	1-124-636-00	ELECT	3300uF	20%	25V	
C832	1-124-636-00	ELECT	3300uF	20%	25V	
C852	1-104-666-11	ELECT	220uF	20%	6.3V	
C853	1-104-666-11	ELECT	220uF	20%	6.3V	
C858	1-124-443-00	ELECT	100uF	20%	10V	
C859	1-126-961-11	ELECT	2.2uF	20%	50V	
C860	1-124-907-11	ELECT	10uF	20%	50V	
C861	1-164-159-11	CERAMIC	0.1uF		50V	
C921	1-164-159-11	CERAMIC	0.1uF		50V	
C922	1-164-159-11	CERAMIC	0.1uF		50V	
C971	1-164-159-11	CERAMIC	0.1uF		50V	
C972	1-164-159-11	CERAMIC	0.1uF		50V	
C1001	1-101-005-00	CERAMIC	22000PF		50V	
C1031	1-124-464-11	ELECT	0.22uF	20%	50V	
C7001	1-101-884-00	CERAMIC	56PF	5%	50V	
C7002	1-101-884-00	CERAMIC	56PF	5%	50V	
C7003	1-164-159-11	CERAMIC	0.1uF		50V	
C7004	1-136-177-00	FILM	1uF	5%	50V	
C7005	1-104-664-11	ELECT	47uF	20%	10V	
C7006	1-126-961-11	ELECT	2.2uF	20%	50V	
C7007	1-162-288-31	CERAMIC	330PF	10%	50V	
C7008	1-164-159-11	CERAMIC	0.1uF		50V	
C7009	1-136-177-00	FILM	1uF	5%	50V	
C7010	1-162-291-31	CERAMIC	560PF	10%	50V	
C7011	1-104-664-11	ELECT	47uF	20%	10V	
C7012	1-104-665-11	ELECT	100uF	20%	16V	
C7013	1-124-907-11	ELECT	10uF	20%	50V	
C7014	1-164-159-11	CERAMIC	0.1uF		50V	
C7015	1-164-159-11	CERAMIC	0.1uF		50V	
		< CONNECTOR >				
CN103	1-774-289-11	PIN, CONNECTOR (PC BOARD) 15P				
CN105	1-774-338-11	SOCKET, CONNECTOR(PC BOARD) 18P				
CN106	1-774-337-11	SOCKET, CONNECTOR(PC BOARD) 16P				
CN802	1-691-773-11	PLUG (MICRO CONNECTOR) 11P				
* CNP701	1-569-624-11	SOCKET, CONNECTOR 17P				
CNP702	1-566-857-11	SOCKET, CONNECTOR 7P				
		< DIODE >				
D701	8-719-200-82	DIODE	11ES2			
D702	8-719-200-82	DIODE	11ES2			
D801	8-719-025-03	DIODE	RBA-402-SL			
D804	8-719-011-16	DIODE	UZ-33BSA-TP			
D805	8-719-010-52	DIODE	UZ-7.5BS-TP			
D807	8-719-109-98	DIODE	RD6.8ES-B3			
D808	8-719-010-52	DIODE	UZ-7.5BS-TP			
D809	8-719-987-63	DIODE	1N4148M			
D810	8-719-987-63	DIODE	1N4148M			
D811	8-719-200-02	DIODE	10E2			
D812	8-719-200-02	DIODE	10E2			
D813	8-719-200-02	DIODE	10E2			

Ref. No.	Part No.	Description		Remark
D814	8-719-200-02	DIODE	10E2	
D821	8-719-987-63	DIODE	1N4148M	
D824	8-719-200-82	DIODE	11ES2	
D840	8-719-987-63	DIODE	1N4148M	
D841	8-719-987-63	DIODE	1N4148M	
D852	8-719-987-63	DIODE	1N4148M	
D1031	8-719-987-63	DIODE	1N4148M	
		< PLATE, GROUND >		
* E801	4-942-204-01	PLATE, GROUND		
		< IC >		
IC101	8-759-634-51	IC	M5218AP	
IC105	8-759-331-39	IC	M62427FP	
IC107	8-759-000-49	IC	MC14066BCP	
IC701	8-759-000-48	IC	MC14052BCP	
IC770	8-759-634-51	IC	M5218AP	
IC801	8-759-231-58	IC	TA7812S	
IC850	8-759-111-68	IC	uPC1237HA	
IC7001	8-759-169-99	IC	SAA6579	
IC7002	8-759-634-51	IC	M5218AP	
		< JACK >		
J102	1-507-854-00	JACK,PHONE	(PHONES)	
J701	1-565-258-11	JACK, PIN 4P	(MD(OUT R/L,IN R/L))	
J702	1-507-854-00	JACK,PHONE	(MIX MIC)	
		< LEAD, JUMPER >		
* JW257	1-535-730-21	LEAD, JUMPER (OFC)		
* JW258	1-535-730-21	LEAD, JUMPER (OFC)		
* JW259	1-535-730-21	LEAD, JUMPER (OFC)		
* JW260	1-535-730-21	LEAD, JUMPER (OFC)		
* JW261	1-535-730-21	LEAD, JUMPER (OFC)		
* JW262	1-535-730-21	LEAD, JUMPER (OFC)		
* JW263	1-535-730-21	LEAD, JUMPER (OFC)		
* JW264	1-535-730-21	LEAD, JUMPER (OFC)		
* JW265	1-535-730-21	LEAD, JUMPER (OFC)		
* JW266	1-535-730-21	LEAD, JUMPER (OFC)		
* JW267	1-535-730-21	LEAD, JUMPER (OFC)		
* JW268	1-535-730-21	LEAD, JUMPER (OFC)		
		< COIL >		
L921	1-420-872-00	COIL, AIR CORE		
L971	1-420-872-00	COIL, AIR CORE		
		< TRANSISTOR >		
Q106	8-729-620-05	TRANSISTOR	2SC2603-EF	
Q190	8-729-900-61	TRANSISTOR	DTA114ES	
Q191	8-729-141-26	TRANSISTOR	2SC3622A-LK	
Q192	8-729-141-26	TRANSISTOR	2SC3622A-LK	
Q801	8-729-018-59	TRANSISTOR	2SB1375-LC	

MAIN

Ref. No.	Part No.	Description			Remark
Q802	8-729-018-60	TRANSISTOR	2SD2012-LC		
Q804	8-729-209-15	TRANSISTOR	2SD2012		
Q805	8-729-018-59	TRANSISTOR	2SB1375-LC		
Q810	8-729-900-80	TRANSISTOR	DTC114ES		
Q856	8-729-900-89	TRANSISTOR	DTC144ES		
Q857	8-729-900-63	TRANSISTOR	DTA124ES		
Q1001	8-729-119-78	TRANSISTOR	2SC403SP-51		
Q1051	8-729-119-78	TRANSISTOR	2SC403SP-51		
		< RESISTOR >			
R101	1-249-429-11	CARBON	10K	5%	1/4W
R102	1-249-429-11	CARBON	10K	5%	1/4W
R103	1-249-429-11	CARBON	10K	5%	1/4W
R104	1-249-437-11	CARBON	47K	5%	1/4W
R105	1-249-437-11	CARBON	47K	5%	1/4W
R106	1-249-416-11	CARBON	820	5%	1/4W
R107	1-249-416-11	CARBON	820	5%	1/4W
R108	1-247-887-00	CARBON	220K	5%	1/4W
R109	1-249-421-11	CARBON	2.2K	5%	1/4W
R110	1-249-417-11	CARBON	1K	5%	1/4W
R111	1-249-441-11	CARBON	100K	5%	1/4W
R112	1-249-425-11	CARBON	4.7K	5%	1/4W
R113	1-249-435-11	CARBON	33K	5%	1/4W
R114	1-249-441-11	CARBON	100K	5%	1/4W
R124	1-249-437-11	CARBON	47K	5%	1/4W
R125	1-247-807-31	CARBON	100	5%	1/4W
R126	1-247-883-00	CARBON	150K	5%	1/4W
R129	1-247-887-00	CARBON	220K	5%	1/4W
R135	1-247-807-31	CARBON	100	5%	1/4W
R136	1-247-807-31	CARBON	100	5%	1/4W
R137	1-247-807-31	CARBON	100	5%	1/4W
R138	1-247-807-31	CARBON	100	5%	1/4W
R139	1-247-807-31	CARBON	100	5%	1/4W
R140	1-247-807-31	CARBON	100	5%	1/4W
R143	1-247-807-31	CARBON	100	5%	1/4W
R144	1-247-807-31	CARBON	100	5%	1/4W
R145	1-247-807-31	CARBON	100	5%	1/4W
R147	1-247-807-31	CARBON	100	5%	1/4W
R148	1-247-807-31	CARBON	100	5%	1/4W
R149	1-247-807-31	CARBON	100	5%	1/4W
R150	1-247-807-31	CARBON	100	5%	1/4W
R151	1-249-437-11	CARBON	47K	5%	1/4W
R152	1-249-437-11	CARBON	47K	5%	1/4W
R156	1-249-416-11	CARBON	820	5%	1/4W
R157	1-249-416-11	CARBON	820	5%	1/4W
R158	1-247-887-00	CARBON	220K	5%	1/4W
R159	1-249-421-11	CARBON	2.2K	5%	1/4W
R160	1-249-417-11	CARBON	1K	5%	1/4W
R161	1-249-441-11	CARBON	100K	5%	1/4W
R162	1-249-425-11	CARBON	4.7K	5%	1/4W
R163	1-249-435-11	CARBON	33K	5%	1/4W
R164	1-249-441-11	CARBON	100K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R172	1-249-429-11	CARBON	10K	5%	1/4W
R173	1-249-429-11	CARBON	10K	5%	1/4W
R174	1-249-437-11	CARBON	47K	5%	1/4W
R175	1-249-429-11	CARBON	10K	5%	1/4W
R176	1-247-883-00	CARBON	150K	5%	1/4W
R177	1-249-429-11	CARBON	10K	5%	1/4W
R181	1-247-807-31	CARBON	100	5%	1/4W
R182	1-247-807-31	CARBON	100	5%	1/4W
R183	1-247-807-31	CARBON	100	5%	1/4W
R185	1-247-807-31	CARBON	100	5%	1/4W
R186	1-247-807-31	CARBON	100	5%	1/4W
R187	1-247-807-31	CARBON	100	5%	1/4W
R188	1-247-807-31	CARBON	100	5%	1/4W
R189	1-247-807-31	CARBON	100	5%	1/4W
R190	1-249-441-11	CARBON	100K	5%	1/4W
R191	1-247-807-31	CARBON	100	5%	1/4W
R192	1-249-425-11	CARBON	4.7K	5%	1/4W
R193	1-247-807-31	CARBON	100	5%	1/4W
R194	1-247-807-31	CARBON	100	5%	1/4W
R195	1-249-425-11	CARBON	4.7K	5%	1/4W
R196	1-247-807-31	CARBON	100	5%	1/4W
R702	1-249-425-11	CARBON	4.7K	5%	1/4W
R703	1-249-427-11	CARBON	6.8K	5%	1/4W
R705	1-247-807-31	CARBON	100	5%	1/4W
R706	1-249-417-11	CARBON	1K	5%	1/4W
R707	1-249-441-11	CARBON	100K	5%	1/4W
R709	1-249-429-11	CARBON	10K	5%	1/4W
R710	1-249-417-11	CARBON	1K	5%	1/4W
R752	1-249-425-11	CARBON	4.7K	5%	1/4W
R753	1-249-427-11	CARBON	6.8K	5%	1/4W
R755	1-247-807-31	CARBON	100	5%	1/4W
R756	1-249-417-11	CARBON	1K	5%	1/4W
R757	1-249-441-11	CARBON	100K	5%	1/4W
R759	1-249-429-11	CARBON	10K	5%	1/4W
R760	1-249-417-11	CARBON	1K	5%	1/4W
R761	1-247-807-31	CARBON	100	5%	1/4W
R762	1-247-807-31	CARBON	100	5%	1/4W
R763	1-247-807-31	CARBON	100	5%	1/4W
R771	1-249-429-11	CARBON	10K	5%	1/4W
R772	1-249-417-11	CARBON	1K	5%	1/4W
R773	1-249-441-11	CARBON	100K	5%	1/4W
R774	1-249-417-11	CARBON	1K	5%	1/4W
R775	1-249-429-11	CARBON	10K	5%	1/4W
R777	1-249-423-11	CARBON	3.3K	5%	1/4W
R779	1-249-441-11	CARBON	100K	5%	1/4W
R780	1-247-807-31	CARBON	100	5%	1/4W
⚠ R801	1-212-982-00	FUSIBLE	100	5%	1/2W F
R804	1-249-417-11	CARBON	1K	5%	1/4W
R805	1-249-417-11	CARBON	1K	5%	1/4W
R807	1-249-417-11	CARBON	1K	5%	1/4W
⚠ R808	1-212-853-00	FUSIBLE	6.8	5%	1/4W F
R809	1-249-417-11	CARBON	1K	5%	1/4W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MAIN PANEL JOG ENCODER KEY VOL ENCODER

Ref. No.	Part No.	Description			Remark
⚠ R810	1-212-934-00	FUSIBLE	1	5%	1/2W F
⚠ R811	1-212-853-00	FUSIBLE	6.8	5%	1/4W F
⚠ R813	1-212-946-11	FUSIBLE	3.3	5%	1/2W F
R818	1-249-417-11	CARBON	1K	5%	1/4W
R819	1-249-417-11	CARBON	1K	5%	1/4W
R840	1-249-429-11	CARBON	10K	5%	1/4W
R851	1-249-429-11	CARBON	10K	5%	1/4W
R853	1-249-397-11	CARBON	22	5%	1/4W
R854	1-249-441-11	CARBON	100K	5%	1/4W
R856	1-249-429-11	CARBON	10K	5%	1/4W
R857	1-249-435-11	CARBON	33K	5%	1/4W
R858	1-249-437-11	CARBON	47K	5%	1/4W
R859	1-249-439-11	CARBON	68K	5%	1/4W
R860	1-249-421-11	CARBON	2.2K	5%	1/4W
R921	1-249-393-11	CARBON	10	5%	1/4W
R922	1-249-389-11	CARBON	4.7	5%	1/4W
R923	1-249-389-11	CARBON	4.7	5%	1/4W
R944	1-249-417-11	CARBON	1K	5%	1/4W
R971	1-249-393-11	CARBON	10	5%	1/4W
R972	1-249-389-11	CARBON	4.7	5%	1/4W
R973	1-249-389-11	CARBON	4.7	5%	1/4W
R1001	1-249-429-11	CARBON	10K	5%	1/4W
R1002	1-249-429-11	CARBON	10K	5%	1/4W
R1013	1-249-425-11	CARBON	4.7K	5%	1/4W
R1021	1-249-429-11	CARBON	10K	5%	1/4W
R1031	1-247-903-00	CARBON	1M	5%	1/4W
R1032	1-249-413-11	CARBON	470	5%	1/4W
R1033	1-249-433-11	CARBON	22K	5%	1/4W
R1034	1-249-433-11	CARBON	22K	5%	1/4W
R1063	1-249-425-11	CARBON	4.7K	5%	1/4W
R1071	1-249-429-11	CARBON	10K	5%	1/4W
R7001	1-249-421-11	CARBON	2.2K	5%	1/4W
R7002	1-249-429-11	CARBON	10K	5%	1/4W
R7003	1-249-441-11	CARBON	100K	5%	1/4W
R7004	1-249-441-11	CARBON	100K	5%	1/4W
R7005	1-249-441-11	CARBON	100K	5%	1/4W
R7006	1-249-441-11	CARBON	100K	5%	1/4W
R7007	1-249-441-11	CARBON	100K	5%	1/4W
R7008	1-247-807-31	CARBON	100	5%	1/4W
R7009	1-247-807-31	CARBON	100	5%	1/4W
		< VARIABLE RESISTOR >			
RV771	1-223-672-11	RES, VAR, CARBON 10K (MIC LEVEL)			
		< RELAY >			
RY801	1-515-921-11	RELAY (12V)			
		< TERMINAL >			
TB901	1-537-240-31	TERMINAL BOARD (CHECKER PIN) (SPEAKER)			

Ref. No.	Part No.	Description			Remark
		< VIBRATOR >			
X7001	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz)			
**********					
*	A-4389-335-A	PANEL BOARD, COMPLETE (German)			
	A-4389-336-A	PANEL BOARD, COMPLETE (Italian)			
*	A-4389-330-A	PANEL BOARD, COMPLETE (AEP,AED)			
*	A-4389-337-A	PANEL BOARD, COMPLETE (UK)			
		**********			
		JOG ENCODER BOARD			
		**********			
		KEY BOARD			
		**********			
		VOL ENCODER BOARD			
		**********			
*	4-932-810-01	CUSHION (FL)			
*	4-971-014-01	HOLDER, FL TUBE			
*	4-978-036-04	HOUSE, LAMP			
		< CAPACITOR >			
C501	1-104-905-11	CAPACITOR	0.22F		5.5V
C502	1-163-059-00	CERAMIC CHIP	0.01uF	10%	50V
C504	1-164-159-11	CERAMIC	0.1uF		50V
C505	1-164-159-11	CERAMIC	0.1uF		50V
C506	1-126-968-11	ELECT	100uF	20%	35V
C511	1-126-968-11	ELECT	100uF	20%	6.3V
C540	1-164-159-11	CERAMIC	0.1uF		50V
C541	1-126-233-11	ELECT	22uF	20%	50V
C542	1-164-159-11	CERAMIC	0.1uF		50V
C543	1-163-165-00	CERAMIC CHIP	22PF	5%	50V
C544	1-163-163-00	CERAMIC CHIP	18PF	5%	50V
C545	1-164-159-11	CERAMIC	0.1uF		50V
C5001	1-101-006-00	CERAMIC	0.047uF		50V
C5002	1-124-464-11	ELECT	0.22uF	20%	50V
C5003	1-101-004-00	CERAMIC	0.01uF		50V
C5004	1-130-473-00	MYLAR	0.0015uF	5%	50V
C5005	1-136-155-00	FILM	0.015uF	5%	50V
C5006	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C5007	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C5020	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C5021	1-124-907-11	ELECT	10uF	20%	50V
C5031	1-126-956-91	ELECT	0.1uF	20%	50V
C5032	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C5033	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C5034	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN501	1-774-344-11	PLUG, CONNECTOR (PC BOARD) 18P			
CN502	1-774-343-11	PLUG, CONNECTOR (PC BOARD) 16P			
		< DIODE >			
D503	8-719-014-73	DIODE UZP-5.6BC-TP			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

PANEL | JOG ENCODER | KEY | VOL ENCODER

Ref. No.	Part No.	Description	Remark
D510	8-719-046-39	LED SEL5821A-TH15 (◁◁ / ▷▷)	
D511	8-719-046-39	LED SEL5821A-TH15 (◁◁ / ▷▷)	
D512	8-719-046-39	LED SEL5821A-TH15 (+/-)	
D513	8-719-046-39	LED SEL5821A-TH15 (+/-)	
D514	8-719-812-44	LED TLO124 (ENTER/NEXT)	
D515	8-719-812-44	LED TLO124 (EFECT ON/OFF)	
D516	8-719-046-43	LED SEL5421E-TP15 (TUNER/BAND)	
D518	8-719-046-39	LED SEL5821A-TH15 (TUNER)	
D519	8-719-046-39	LED SEL5821A-TH15 (EFECT)	
D520	8-719-057-62	LED SEL1810D-TP3 (TIMER.SET)	
D521	8-719-058-23	LED HLMF-K405-2UP (REPEAT)	
D522	8-719-058-23	LED HLMF-K405-2UP (CLIP A)	
D523	8-719-058-23	LED HLMF-K405-2UP (CLIP C)	
D524	8-719-058-23	LED HLMF-K405-2UP (CLIP ERASE)	
D525	8-719-058-23	LED HLMF-K405-2UP (CLIP ERASE)	
D526	8-719-058-23	LED HLMF-K405-2UP (1/ALL DISC)	
D527	8-719-058-23	LED HLMF-K405-2UP (1/ALL DISC)	
D528	8-719-046-39	LED SEL5821A-TH15 (TIMER)	
D529	8-719-046-39	LED SEL5821A-TH15 (← →)	
D530	8-719-046-39	LED SEL5821A-TH15 (← →)	
D531	8-719-046-42	LED SEL5421E-TH8F (TIMER)	
D532	8-719-046-39	LED SEL5821A-TH15 (GROOVE)	
D533	8-719-058-23	LED HLMF-K405-2UP (PTY)	
D534	8-719-057-62	LED SEL1810D-TP3 (TUNER MEMORY)	
D535	8-719-057-62	LED SEL1810D-TP3 (TUNER MODE)	
D536	8-719-057-62	LED SEL1810D-TP3 (CLOCK SET)	
D537	8-719-057-62	LED SEL1810D-TP3 (TIMER SELECT)	
D538	8-719-046-39	LED SEL5821A-TH15 (CD)	
D539	8-719-058-23	LED HLMF-K405-2UP (CLIP B)	
D540	8-719-058-23	LED HLMF-K405-2UP (CLIP PLAY)	
D541	8-719-058-23	LED HLMF-K405-2UP (CLIP PLAY)	
D542	8-719-058-23	LED HLMF-K405-2UP (EDIT)	
D543	8-719-058-23	LED HLMF-K405-2UP (PLAY MODE)	
D544	8-719-058-23	LED HLMF-K405-2UP (PLAY MODE)	
D550	8-719-200-82	DIODE 11ES2	
D551	8-719-987-63	DIODE 1N4148M	
D552	8-719-987-63	DIODE 1N4148M	
D553	8-719-987-63	DIODE 1N4148M	
D554	8-719-987-63	DIODE 1N4148M	
D555	8-719-987-63	DIODE 1N4148M	
D556	8-719-010-48	DIODE UZ-6.8BS	
D557	8-719-987-63	DIODE 1N4148M	
D5001	8-719-988-62	DIODE 1SS355	
D5002	8-719-988-62	DIODE 1SS355	
D5003	8-719-988-62	DIODE 1SS355	
D5004	8-719-988-62	DIODE 1SS355	
D5010	8-719-987-63	DIODE 1N4148M	
		< INDICATOR TUBE >	
FL501	1-517-483-11	INDICATOR TUBE, FLUORESCENT	

Ref. No.	Part No.	Description	Remark
		< IC >	
IC501	8-759-385-36	IC ASD0204-014	
IC502	8-759-332-18	IC GP1U27XB	
IC503	8-759-165-82	IC PST600E-T	
IC504	8-759-372-64	IC M66313FP-200C	
		< JUMPER RESISTOR >	
JR505	1-216-295-91	METAL CHIP 0 5%	1/10W
JR506	1-216-296-91	METAL CHIP 0 5%	1/8W
JR508	1-216-296-91	METAL CHIP 0 5%	1/8W
JR509	1-216-296-91	METAL CHIP 0 5%	1/8W
JR510	1-216-295-91	METAL CHIP 0 5%	1/10W
JR512	1-216-296-91	METAL CHIP 0 5%	1/8W
JR515	1-216-296-91	METAL CHIP 0 5%	1/8W
JR516	1-216-296-91	METAL CHIP 0 5%	1/8W
JR517	1-216-296-91	METAL CHIP 0 5%	1/8W
JR518	1-216-296-91	METAL CHIP 0 5%	1/8W
JR519	1-216-296-91	METAL CHIP 0 5%	1/8W
JR520	1-216-296-91	METAL CHIP 0 5%	1/8W
JR521	1-216-295-91	METAL CHIP 0 5%	1/10W
JR522	1-216-295-91	METAL CHIP 0 5%	1/10W
JR523	1-216-296-91	METAL CHIP 0 5%	1/8W
JR524	1-216-296-91	METAL CHIP 0 5%	1/8W
JR525	1-216-296-91	METAL CHIP 0 5%	1/8W
JR526	1-216-296-91	METAL CHIP 0 5%	1/8W
JR529	1-216-296-91	METAL CHIP 0 5%	1/8W
JR530	1-216-296-91	METAL CHIP 0 5%	1/8W
JR531	1-216-296-91	METAL CHIP 0 5%	1/8W
JR532	1-216-296-91	METAL CHIP 0 5%	1/8W
JR533	1-216-296-91	METAL CHIP 0 5%	1/8W
JR534	1-216-296-91	METAL CHIP 0 5%	1/8W
JR535	1-216-296-91	METAL CHIP 0 5%	1/8W
JR536	1-216-295-91	METAL CHIP 0 5%	1/10W
JR537	1-216-295-91	METAL CHIP 0 5%	1/10W
JR538	1-216-295-91	METAL CHIP 0 5%	1/10W
JR539	1-216-296-91	METAL CHIP 0 5%	1/8W
JR540	1-216-296-91	METAL CHIP 0 5%	1/8W
JR541	1-216-296-91	METAL CHIP 0 5%	1/8W
JR543	1-216-296-91	METAL CHIP 0 5%	1/8W
JR544	1-216-296-91	METAL CHIP 0 5%	1/8W
JR546	1-216-295-91	METAL CHIP 0 5%	1/10W
JR547	1-216-296-91	METAL CHIP 0 5%	1/8W
JR552	1-216-296-91	METAL CHIP 0 5%	1/8W
JR553	1-216-296-91	METAL CHIP 0 5%	1/8W
JR554	1-216-296-91	METAL CHIP 0 5%	1/8W
JR555	1-216-296-91	METAL CHIP 0 5%	1/8W
JR556	1-216-296-91	METAL CHIP 0 5%	1/8W
JR558	1-216-296-91	METAL CHIP 0 5%	1/8W
JR559	1-216-296-91	METAL CHIP 0 5%	1/8W
JR560	1-216-296-91	METAL CHIP 0 5%	1/8W
JR561	1-216-296-91	METAL CHIP 0 5%	1/8W
JR562	1-216-296-91	METAL CHIP 0 5%	1/8W

Ref. No.	Part No.	Description			Remark
JR563	1-216-295-91	METAL CHIP	0	5%	1/10W
JR564	1-216-295-91	METAL CHIP	0	5%	1/10W
JR565	1-216-296-91	METAL CHIP	0	5%	1/8W
JR566	1-216-296-91	METAL CHIP	0	5%	1/8W
JR567	1-216-296-91	METAL CHIP	0	5%	1/8W
JR572	1-216-296-91	METAL CHIP	0	5%	1/8W
JR573	1-216-296-91	METAL CHIP	0	5%	1/8W
JR574	1-216-295-91	METAL CHIP	0	5%	1/10W
JR575	1-216-296-91	METAL CHIP	0	5%	1/8W
JR576	1-216-295-91	METAL CHIP	0	5%	1/10W
JR580	1-216-296-91	METAL CHIP	0	5%	1/8W
JR581	1-216-296-91	METAL CHIP	0	5%	1/8W
JR582	1-216-295-91	METAL CHIP	0	5%	1/10W
JR583	1-216-295-91	METAL CHIP	0	5%	1/10W
JR584	1-216-296-91	METAL CHIP	0	5%	1/8W
JR585	1-216-296-91	METAL CHIP	0	5%	1/8W
JR586	1-216-296-91	METAL CHIP	0	5%	1/8W
JR587	1-216-296-91	METAL CHIP	0	5%	1/8W
JR588	1-216-296-91	METAL CHIP	0	5%	1/8W
JR589	1-216-296-91	METAL CHIP	0	5%	1/8W
JR590	1-216-296-91	METAL CHIP	0	5%	1/8W
JR591	1-216-296-91	METAL CHIP	0	5%	1/8W
JR595	1-216-295-91	METAL CHIP	0	5%	1/10W
JR596	1-216-295-91	METAL CHIP	0	5%	1/10W
JR597	1-216-296-91	METAL CHIP	0	5%	1/8W
JR600	1-216-295-91	METAL CHIP	0	5%	1/10W
JR601	1-216-296-91	METAL CHIP	0	5%	1/8W
		< LEAD, JUMPER >			
* JW501	1-535-730-21	LEAD, JUMPER (OFC)			
* JW502	1-535-730-21	LEAD, JUMPER (OFC)			
* JW503	1-535-730-21	LEAD, JUMPER (OFC)			
* JW504	1-535-730-21	LEAD, JUMPER (OFC)			
* JW505	1-535-730-21	LEAD, JUMPER (OFC)			
* JW506	1-535-730-21	LEAD, JUMPER (OFC)			
* JW681	1-535-730-21	LEAD, JUMPER (OFC)			
* JW682	1-535-730-21	LEAD, JUMPER (OFC)			
		< COIL >			
L501	1-410-509-11	INDUCTOR	10uH		
L502	1-410-509-11	INDUCTOR	10uH		
		< TRANSISTOR >			
Q501	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q502	8-729-620-05	TRANSISTOR	2SC2603-EF		
Q503	8-729-421-22	TRANSISTOR	UN2211		
Q504	8-729-421-22	TRANSISTOR	UN2211		
Q505	8-729-421-22	TRANSISTOR	UN2211		
Q506	8-729-421-22	TRANSISTOR	UN2211		
Q531	8-729-118-01	TRANSISTOR	2SB1116		
Q532	8-729-118-01	TRANSISTOR	2SB1116		

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R501	1-249-401-11	CARBON	47	5%	1/4W
R502	1-249-403-11	CARBON	68	5%	1/4W
R503	1-249-403-11	CARBON	68	5%	1/4W
R504	1-247-807-31	CARBON	100	5%	1/4W
R505	1-249-407-11	CARBON	150	5%	1/4W
R506	1-249-409-11	CARBON	220	5%	1/4W
R507	1-249-411-11	CARBON	330	5%	1/4W
R508	1-249-411-11	CARBON	330	5%	1/4W
R509	1-249-413-11	CARBON	470	5%	1/4W
R510	1-249-415-11	CARBON	680	5%	1/4W
R511	1-249-417-11	CARBON	1K	5%	1/4W
R512	1-249-419-11	CARBON	1.5K	5%	1/4W
R513	1-249-421-11	CARBON	2.2K	5%	1/4W
R514	1-249-423-11	CARBON	3.3K	5%	1/4W
R516	1-249-401-11	CARBON	47	5%	1/4W
R517	1-249-403-11	CARBON	68	5%	1/4W
R518	1-249-403-11	CARBON	68	5%	1/4W
R519	1-247-807-31	CARBON	100	5%	1/4W
R520	1-249-407-11	CARBON	150	5%	1/4W
R521	1-249-409-11	CARBON	220	5%	1/4W
R522	1-216-037-00	METAL CHIP	330	5%	1/10W
R523	1-216-037-00	METAL CHIP	330	5%	1/10W
R524	1-216-041-00	METAL CHIP	470	5%	1/10W
R525	1-216-045-00	METAL CHIP	680	5%	1/10W
R526	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R527	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R528	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R529	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R530	1-249-397-11	CARBON	22	5%	1/4W
R531	1-249-397-11	CARBON	22	5%	1/4W
R532	1-247-807-31	CARBON	100	5%	1/4W
R533	1-249-401-11	CARBON	47	5%	1/4W
R534	1-249-403-11	CARBON	68	5%	1/4W
R536	1-249-437-11	CARBON	47K	5%	1/4W
R537	1-249-433-11	CARBON	22K	5%	1/4W
R545	1-216-170-00	METAL GLAZE	68	5%	1/8W
R546	1-216-170-00	METAL GLAZE	68	5%	1/8W
R547	1-216-170-00	METAL GLAZE	68	5%	1/8W
R548	1-216-170-00	METAL GLAZE	68	5%	1/8W
R549	1-216-170-00	METAL GLAZE	68	5%	1/8W
R550	1-216-170-00	METAL GLAZE	68	5%	1/8W
R551	1-216-009-00	METAL CHIP	22	5%	1/10W
R552	1-216-009-00	METAL CHIP	22	5%	1/10W
R553	1-216-170-00	METAL GLAZE	68	5%	1/8W
R554	1-249-397-11	CARBON	22	5%	1/4W
R555	1-249-403-11	CARBON	68	5%	1/4W
R556	1-249-403-11	CARBON	68	5%	1/4W
R557	1-216-009-00	METAL CHIP	22	5%	1/10W
R558	1-216-170-00	METAL GLAZE	68	5%	1/8W
R559	1-216-170-00	METAL GLAZE	68	5%	1/8W

PANEL | JOG ENCODER | KEY | VOL ENCODER

Ref. No.	Part No.	Description			Remark
R560	1-216-170-00	METAL GLAZE	68	5%	1/8W
R561	1-216-170-00	METAL GLAZE	68	5%	1/8W
R562	1-216-170-00	METAL GLAZE	68	5%	1/8W
R563	1-216-170-00	METAL GLAZE	68	5%	1/8W
R564	1-216-009-00	METAL CHIP	22	5%	1/10W
R565	1-216-170-00	METAL GLAZE	68	5%	1/8W
R566	1-216-009-00	METAL CHIP	22	5%	1/10W
R568	1-249-425-11	CARBON	4.7K	5%	1/4W
R569	1-249-429-11	CARBON	10K	5%	1/4W
R570	1-249-393-11	CARBON	10	5%	1/4W
R576	1-249-429-11	CARBON	10K	5%	1/4W
R577	1-247-807-31	CARBON	100	5%	1/4W
R578	1-247-807-31	CARBON	100	5%	1/4W
R579	1-247-807-31	CARBON	100	5%	1/4W
R580	1-247-807-31	CARBON	100	5%	1/4W
R581	1-216-025-91	METAL GLAZE	100	5%	1/10W
R582	1-216-025-91	METAL GLAZE	100	5%	1/10W
R583	1-247-807-31	CARBON	100	5%	1/4W
R584	1-247-807-31	CARBON	100	5%	1/4W
R585	1-247-807-31	CARBON	100	5%	1/4W
R586	1-247-807-31	CARBON	100	5%	1/4W
R587	1-247-807-31	CARBON	100	5%	1/4W
R588	1-247-807-31	CARBON	100	5%	1/4W
R589	1-247-807-31	CARBON	100	5%	1/4W
R592	1-247-807-31	CARBON	100	5%	1/4W
R593	1-247-807-31	CARBON	100	5%	1/4W
R594	1-216-174-00	METAL GLAZE	100	5%	1/8W
R596	1-247-807-31	CARBON	100	5%	1/4W
R597	1-247-807-31	CARBON	100	5%	1/4W
R598	1-247-807-31	CARBON	100	5%	1/4W
R599	1-247-807-31	CARBON	100	5%	1/4W
R5001	1-216-085-00	METAL CHIP	33K	5%	1/10W
R5002	1-216-085-00	METAL CHIP	33K	5%	1/10W
R5003	1-216-085-00	METAL CHIP	33K	5%	1/10W
R5004	1-216-073-00	METAL CHIP	10K	5%	1/10W
R5009	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R5010	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R5011	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R5012	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R5013	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R5014	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R5015	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R5016	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R5017	1-249-429-11	CARBON	10K	5%	1/4W
R5018	1-249-429-11	CARBON	10K	5%	1/4W
R5019	1-249-421-11	CARBON	2.2K	5%	1/4W
R5020	1-249-429-11	CARBON	10K	5%	1/4W
R5021	1-249-429-11	CARBON	10K	5%	1/4W
R5022	1-249-429-11	CARBON	10K	5%	1/4W
R5023	1-249-429-11	CARBON	10K	5%	1/4W
R5026	1-216-073-00	METAL CHIP	10K	5%	1/10W
R5027	1-216-222-00	METAL GLAZE	10K	5%	1/8W

Ref. No.	Part No.	Description			Remark
R5028	1-249-441-11	CARBON	100K	5%	1/4W
R5029	1-249-441-11	CARBON	100K	5%	1/4W
R5030	1-249-441-11	CARBON	100K	5%	1/4W
R5031	1-249-429-11	CARBON (AEP,UK,AED)	10K	5%	1/4W
R5031	1-249-427-11	CARBON (German,Italian)	6.8K	5%	1/4W
R5032	1-249-423-11	CARBON	3.3K	5%	1/4W
R5033	1-249-441-11	CARBON	100K	5%	1/4W
R5038	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R5051	1-249-421-11	CARBON	2.2K	5%	1/4W
R5052	1-249-409-11	CARBON	220	5%	1/4W
R5053	1-249-409-11	CARBON	220	5%	1/4W
R5071	1-249-423-11	CARBON	3.3K	5%	1/4W
R5072	1-216-073-00	METAL CHIP	10K	5%	1/10W
R5073	1-249-423-11	CARBON	3.3K	5%	1/4W
R5074	1-216-073-00	METAL CHIP	10K	5%	1/10W
R5075	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R5076	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R5077	1-249-429-11	CARBON	10K	5%	1/4W
R5078	1-249-429-11	CARBON	10K	5%	1/4W
R5079	1-249-437-11	CARBON	47K	5%	1/4W
R5082	1-216-073-00	METAL CHIP	10K	5%	1/10W
R5083	1-216-073-00	METAL CHIP	10K	5%	1/10W
R5084	1-216-073-00	METAL CHIP	10K	5%	1/10W

< SWITCH >

S501	1-554-303-21	SWITCH, TACTILE (SYSTEM POWER)
S502	1-554-303-21	SWITCH, TACTILE (TIMER)
S503	1-554-303-21	SWITCH, TACTILE (SLEEP)
S505	1-554-303-21	SWITCH, TACTILE (KARAOKE PON/MPX)
S506	1-554-303-21	SWITCH, TACTILE (EFECT ON/OFF)
S507	1-554-303-21	SWITCH, TACTILE (MENU 1)
S508	1-554-303-21	SWITCH, TACTILE (MENU 2)
S509	1-554-303-21	SWITCH, TACTILE (MENU 3)
S510	1-554-303-21	SWITCH, TACTILE (MENU 4)
S511	1-554-303-21	SWITCH, TACTILE (MEMORY)
S512	1-554-303-21	SWITCH, TACTILE (SURROUND)
S513	1-554-303-21	SWITCH, TACTILE (FUNCTION)
S514	1-554-303-21	SWITCH, TACTILE (DISPLAY)
S515	1-554-303-21	SWITCH, TACTILE (TUNER/BAND)
S517	1-554-303-21	SWITCH, TACTILE (P.FILE)
S518	1-554-303-21	SWITCH, TACTILE (DBFB)
S519	1-554-303-21	SWITCH, TACTILE (GROOVE)
S520	1-554-303-21	SWITCH, TACTILE (FREQUENCY +)
S521	1-554-303-21	SWITCH, TACTILE (ENTER/NEXT)
S522	1-554-303-21	SWITCH, TACTILE (FREQUENCY -)
S523	1-572-184-11	SWITCH, KEYBOARD (CLIP C)
S524	1-572-184-11	SWITCH, KEYBOARD (CLIP B)
S525	1-572-184-11	SWITCH, KEYBOARD (CLIP A)
S526	1-572-184-11	SWITCH, KEYBOARD (CLIP PLAY TUNER MEMORY)
S527	1-572-184-11	SWITCH, KEYBOARD (CLIP ERASE)
S528	1-572-184-11	SWITCH, KEYBOARD (EDIT TUNING MODE)

Ref. No.	Part No.	Description				Remark
S529	1-572-184-11	SWITCH, KEYBOARD (REPEAT TIMER SELECT)				
S530	1-572-184-11	SWITCH, KEYBOARD (PLAY MODE TIMER SET)				
S531	1-572-184-11	SWITCH, KEYBOARD (1/ALL DISCS CLOCKSET)				
S551	1-473-480-11	ENCODER, ROTARY (JOG ENCORDER)				
S552	1-467-869-11	ENCODER, ROTARY (VOL ENCORDER)				
		< VIBRATOR >				
X501	1-579-233-11	VIBRATOR, CERAMIC (5.0MHz)				
X502	1-567-098-41	VIBRATOR, CRYSTAL (32kHz)				
**********						
*	A-4389-334-A	POWER AMPLIFIER BOARD, COMPLETE (EXCEPT UK)				
*	A-4389-341-A	POWER AMPLIFIER BOARD, COMPLETE (UK)				
		**********				
		< CAPACITOR >				
C901	1-126-963-11	ELECT	4.7uF	20%	50V	
C902	1-162-293-31	CERAMIC	820PF	10%	50V	
C903	1-162-286-31	CERAMIC	220PF	10%	50V	
C904	1-126-967-11	ELECT	47uF	20%	50V	
C905	1-126-967-11	ELECT	47uF	20%	50V	
C906	1-136-163-00	FILM	0.068uF	5%	50V	
C907	1-136-163-00	FILM	0.068uF	5%	50V	
C929	1-164-159-11	CERAMIC	0.1uF		50V	
C932	1-124-910-11	ELECT	47uF	20%	50V	
C933	1-164-159-11	CERAMIC	0.1uF		50V	
C934	1-126-968-11	ELECT	100uF	20%	50V	
C937	1-126-965-11	ELECT	22uF	20%	50V	
C938	1-126-934-11	ELECT	220uF	20%	16V	
C940	1-124-910-11	ELECT	47uF	20%	50V	
C950	1-136-161-00	FILM	0.047uF	5%	50V	
C951	1-126-963-11	ELECT	4.7uF	20%	50V	
C952	1-162-293-31	CERAMIC	820PF	10%	50V	
C953	1-162-286-31	CERAMIC	220PF	10%	50V	
C954	1-126-967-11	ELECT	47uF	20%	50V	
C955	1-126-967-11	ELECT	47uF	20%	50V	
C956	1-136-163-00	FILM	0.068uF	5%	50V	
C957	1-136-163-00	FILM	0.068uF	5%	50V	
		< DIODE >				
D903	8-719-987-63	DIODE 1N4148M				
D953	8-719-987-63	DIODE 1N4148M				
		< IC >				
IC901	8-749-920-09	IC STK-4152MK2K				
		< TRANSISTOR >				
Q901	8-729-900-80	TRANSISTOR DTC114ES				
Q902	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA				
Q952	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA				

Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R121	1-249-441-11	CARBON	100K	5%	1/4W	
R171	1-249-441-11	CARBON	100K	5%	1/4W	
R901	1-249-417-11	CARBON	1K	5%	1/4W	
R902	1-249-437-11	CARBON	47K	5%	1/4W	
R903	1-249-413-11	CARBON	470	5%	1/4W	
R904	1-249-437-11	CARBON	47K	5%	1/4W	
R906	1-249-425-11	CARBON	4.7K	5%	1/4W	
R907	1-249-425-11	CARBON	4.7K	5%	1/4W	
R908	1-249-425-11	CARBON	4.7K	5%	1/4W	
R909	1-249-425-11	CARBON	4.7K	5%	1/4W	
R910	1-249-397-11	CARBON	22	5%	1/4W	
R911	1-249-397-11	CARBON	22	5%	1/4W	
R913	1-249-417-11	CARBON	1K	5%	1/4W	
R914	1-249-431-11	CARBON	15K	5%	1/4W	
R915	1-249-441-11	CARBON	100K	5%	1/4W	
⚠ R920	1-217-151-00	RES, METAL PLATE	0.22			
⚠ R932	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R933	1-249-421-11	CARBON	2.2K	5%	1/4W	
R934	1-249-421-11	CARBON	2.2K	5%	1/4W	
R935	1-249-421-11	CARBON	2.2K	5%	1/4W	
R936	1-249-421-11	CARBON	2.2K	5%	1/4W	
R937	1-249-437-11	CARBON	47K	5%	1/4W	
R938	1-249-441-11	CARBON	100K	5%	1/4W	
R939	1-249-433-11	CARBON	22K	5%	1/4W	
R940	1-249-433-11	CARBON	22K	5%	1/4W	
R941	1-249-429-11	CARBON	10K	5%	1/4W	
R942	1-249-413-11	CARBON	470	5%	1/4W	
⚠ R943	1-212-881-11	FUSIBLE	100	5%	1/4W	F
R951	1-249-417-11	CARBON	1K	5%	1/4W	
R952	1-249-437-11	CARBON	47K	5%	1/4W	
R953	1-249-413-11	CARBON	470	5%	1/4W	
R954	1-249-437-11	CARBON	47K	5%	1/4W	
R956	1-249-425-11	CARBON	4.7K	5%	1/4W	
R957	1-249-425-11	CARBON	4.7K	5%	1/4W	
R958	1-249-425-11	CARBON	4.7K	5%	1/4W	
R959	1-249-425-11	CARBON	4.7K	5%	1/4W	
R960	1-249-397-11	CARBON	22	5%	1/4W	
R961	1-249-397-11	CARBON	22	5%	1/4W	
R963	1-249-417-11	CARBON	1K	5%	1/4W	
R964	1-249-431-11	CARBON	15K	5%	1/4W	
R965	1-249-441-11	CARBON	100K	5%	1/4W	
⚠ R970	1-217-151-00	RES, METAL PLATE	0.22			
⚠ R998	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
⚠ R999	1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
**********						
*	1-660-130-11	SURROUND BOARD				
		**********				
		< CONNECTOR >				
CN902	1-564-517-11	PLUG, CONNECTOR 2P				

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

SURROUND TCB

Ref. No.	Part No.	Description			Remark
		< TERMINAL >			
TB902	1-537-240-31	TERMINAL BOARD (CHECKER PIN) (SURROUND SPEAKER)			
**********					
*	A-4303-529-A	TCB BOARD, COMPLETE (AEP,AED,UK)			
*	A-4303-530-A	TCB BOARD, COMPLETE (German,Italian)			
		**********			
		< CAPACITOR >			
C1	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C2	1-126-967-11	ELECT	47uF	20%	16V
C3	1-163-038-91	CERAMIC	100000PF		50V
C5	1-163-031-11	CERAMIC	10000PF		50V
C6	1-163-038-91	CERAMIC	100000PF		50V
C8	1-163-031-11	CERAMIC	10000PF		50V
C9	1-163-031-11	CERAMIC	10000PF		50V
C10	1-163-031-11	CERAMIC	10000PF		50V
C11	1-216-295-91	METAL CHIP	0	5%	1/10W (German,Italian)
C16	1-163-038-91	CERAMIC	100000PF		50V
C19	1-163-249-11	CHIP CERAMIC	82PF	5%	50V (AEP,UK,AED)
C21	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C22	1-163-031-11	CERAMIC	10000PF		50V
C23	1-163-235-11	CHIP CERAMIC	22PF	5%	50V
C24	1-163-239-11	CHIP CERAMIC	33PF	5%	50V
C26	1-126-967-11	ELECT	47uF	20%	16V
C28	1-126-967-11	ELECT	47uF	20%	16V
C29	1-162-306-11	CERAMIC	10000PF	30%	16V
C30	1-124-925-11	ELECT	2.2uF	20%	100V
C31	1-163-031-11	CERAMIC	10000PF		50V
C32	1-163-038-91	CERAMIC	100000PF		50V
C33	1-163-038-91	CERAMIC	100000PF		50V
C34	1-163-091-00	CERAMIC CHIP	8PF		50V (German,Italian)
C34	1-163-229-11	CHIP CERAMIC	12PF	5%	50V (AEP,UK,AED)
C35	1-163-038-91	CERAMIC	100000PF	50V	
C36	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C37	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C39	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C40	1-163-031-11	CERAMIC	10000PF		50V
C41	1-163-031-11	CERAMIC	10000PF		50V
C42	1-163-038-91	CERAMIC	100000PF		50V
C43	1-163-038-91	CERAMIC	100000PF		50V
C44	1-163-031-11	CERAMIC	10000PF		50V
C45	1-163-038-91	CERAMIC	100000PF		50V
C46	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C47	1-126-967-11	ELECT	47uF	20%	16V
C48	1-163-031-11	CERAMIC	10000PF		50V
C49	1-124-902-00	ELECT	0.47uF	20%	50V
C50	1-124-903-11	ELECT	1.0uF	20%	50V
C51	1-124-903-11	ELECT	1.0uF	20%	50V
C52	1-126-964-11	ELECT	10uF	20%	50V
C53	1-126-964-11	ELECT	10uF	20%	50V
C54	1-126-157-11	ELECT	10uF	20%	16V
C55	1-126-157-11	ELECT	10uF	20%	16V
C56	1-126-157-11	ELECT	10uF	20%	16V
C57	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C58	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C59	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C60	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C61	1-126-301-11	ELECT	1uF	20%	50V
C62	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C63	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C64	1-126-967-11	ELECT	47uF	20%	16V
C65	1-163-031-11	CERAMIC	10000PF		50V
C66	1-126-162-11	ELECT	3.3uF	20%	50V
C67	1-126-933-11	ELECT	100uF	20%	50V
C68	1-162-306-11	CERAMIC	10000PF	30%	16V
C71	1-162-306-11	CERAMIC	10000PF	30%	16V
C72	1-126-967-11	ELECT	47uF	20%	16V
C120	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
		< FILTER >			
CF1	1-579-374-71	FILTER, CERAMIC			
CF2	1-760-393-11	FILTER, CERAMIC			
CF3	1-760-393-11	FILTER, CERAMIC			
		< CONNECTOR >			
CN1	1-774-292-11	HOUSING,CONNECTOR(PC BOARD)15P			
		< DIODE >			
D21	8-719-976-99	DIODE DTZ5.1B			
D41	8-719-016-74	DIODE 1SS352-TPH3			
		< FRONT END >			
FE1	1-233-542-11	ENCAPSULATED COMPONENT			
FE2	1-233-514-11	ENCAPSULATED COMPONENT (AEP,UK,AED)			
FE2	1-239-260-11	ENCAPSULATED COMPONENT (German,Italian)			
		< IC >			
IC21	8-759-288-54	IC LC72130			
IC41	8-759-176-03	IC LA1835			
		< IFT >			
IFT41	1-409-636-11	TRANSFORMER,IF(CERAMIC FILTER)			
		< JUMPER RESISTOR >			
JR1	1-216-295-91	METAL CHIP	0	5%	1/10W (German,Italian)
JR2	1-216-295-91	METAL CHIP	0	5%	1/10W (AEP,UK,AED)

Ref. No.	Part No.	Description		Remark
JR3	1-216-295-91	METAL CHIP	0	5% 1/10W (German,Italian)
JR6	1-216-295-91	METAL CHIP	0	5% 1/10W
JR7	1-216-295-91	METAL CHIP	0	5% 1/10W (German,Italian)
JR8	1-216-295-91	METAL CHIP	0	5% 1/10W (AEP,UK,AED)
JR9	1-216-295-91	METAL CHIP	0	5% 1/10W (AEP,UK,AED)
JR45	1-216-295-91	METAL CHIP	0	5% 1/10W
JR46	1-216-296-91	METAL CHIP	0	5% 1/8W
JR47	1-216-295-91	METAL CHIP	0	5% 1/10W
JR48	1-216-295-91	METAL CHIP	0	5% 1/10W
JR49	1-216-296-91	METAL CHIP	0	5% 1/8W
JR51	1-216-295-91	METAL CHIP	0	5% 1/10W (AEP,UK,AED)
JR52	1-216-295-91	METAL CHIP	0	5% 1/10W
JR53	1-216-296-91	METAL CHIP	0	5% 1/8W (AEP,UK,AED)
JR54	1-216-295-91	METAL CHIP	0	5% 1/10W
		< JUMPER RESISTOR >		
JW4	1-249-413-11	CARBON	470	5% 1/4W
JW5	1-249-413-11	CARBON	470	5% 1/4W
		< COIL >		
L2	1-414-142-11	MICRO INDUCTOR 1uH		
L3	1-410-521-11	MICRO INDUCTOR 100uH		
L4	1-410-515-11	MICRO INDUCTOR 33uH		
L41	1-407-500-00	MICRO INDUCTOR 4.7mH (AEP,UK,AED)		
L41	1-410-119-11	MICRO INDUCTOR 1mH (German,Italian)		
		< FILTER >		
LPF1	1-239-845-11	FILTER, LOW PASS		
LPF2	1-239-845-11	FILTER, LOW PASS		
		< TRANSISTOR >		
Q1	8-729-201-27	TRANSISTOR	2SC2715Y-TE85L	
Q2	8-729-201-27	TRANSISTOR	2SC2715Y-TE85L	
Q3	8-729-201-27	TRANSISTOR	2SC2715Y-TE85L	
Q4	8-729-201-27	TRANSISTOR	2SC2715Y-TE85L	
Q5	8-729-424-08	TRANSISTOR	MUN2111T1	
Q9	8-729-216-22	TRANSISTOR	2SA812-T1-M5M6 (AEP,UK, AED)	
Q11	8-729-421-22	TRANSISTOR	MUN2211T1 (AEP,UK,AED)	
Q12	8-729-421-22	TRANSISTOR	MUN2211T1 (AEP,UK,AED)	
Q13	8-729-421-22	TRANSISTOR	MUN2211T1 (AEP,UK,AED)	
Q14	8-729-421-22	TRANSISTOR	MUN2211T1 (AEP,UK,AED)	
		< RESISTOR >		
R1	1-249-401-11	CARBON	47	5% 1/4W
R2	1-216-037-00	METAL CHIP	330	5% 1/10W
R3	1-216-037-00	METAL CHIP	330	5% 1/10W
R5	1-216-037-00	METAL CHIP	330	5% 1/10W
R6	1-216-081-00	METAL CHIP	22K	5% 1/10W

Ref. No.	Part No.	Description		Remark
R7	1-216-037-00	METAL CHIP	330	5% 1/10W
R8	1-216-037-00	METAL CHIP	330	5% 1/10W
R9	1-216-081-00	METAL CHIP	22K	5% 1/10W
R10	1-216-037-00	METAL CHIP	330	5% 1/10W
R11	1-216-081-00	METAL CHIP	22K	5% 1/10W
R12	1-216-037-00	METAL CHIP	330	5% 1/10W
R13	1-216-037-00	METAL CHIP	330	5% 1/10W
R14	1-216-081-00	METAL CHIP	22K	5% 1/10W
R18	1-216-073-00	METAL CHIP	10K	5% 1/10W (AEP,UK,AED)
R19	1-216-073-00	METAL CHIP	10K	5% 1/10W (AEP,UK,AED)
R21	1-216-049-91	RES, CHIP	1.0K	5% 1/10W
R22	1-216-049-91	RES, CHIP	1.0K	5% 1/10W
R23	1-216-049-91	RES, CHIP	1.0K	5% 1/10W
R24	1-216-025-91	RES, CHIP	100	5% 1/10W
R25	1-249-417-11	CARBON	1K	5% 1/4W
R26	1-249-437-11	CARBON	47K	5% 1/4W
R27	1-249-429-11	CARBON	10K	5% 1/4W
R28	1-249-417-11	CARBON	1K	5% 1/4W
R29	1-216-061-00	METAL CHIP	3.3K	5% 1/10W
R30	1-216-186-00	RES, CHIP	330	5% 1/8W
R31	1-216-025-91	RES, CHIP	100	5% 1/10W
R32	1-249-425-11	CARBON	4.7K	5% 1/4W
R33	1-249-425-11	CARBON	4.7K	5% 1/4W
R34	1-216-065-00	METAL CHIP	4.7K	5% 1/10W
R35	1-216-214-00	RES, CHIP	4.7K	5% 1/8W
R36	1-216-025-91	RES, CHIP	100	5% 1/10W
R37	1-216-073-00	METAL CHIP	10K	5% 1/10W
R38	1-216-089-91	RES, CHIP	47K	5% 1/10W
R39	1-249-429-11	CARBON	10K	5% 1/4W
R42	1-216-073-00	METAL CHIP	10K	5% 1/10W
R43	1-216-042-00	METAL CHIP	510	5% 1/10W
R44	1-216-021-00	METAL CHIP	68	5% 1/10W
R45	1-249-423-11	CARBON	3.3K	5% 1/4W
R46	1-216-073-00	METAL CHIP	10K	5% 1/10W
R47	1-216-097-91	RES, CHIP	100K	5% 1/10W
R48	1-249-417-11	CARBON	1K	5% 1/4W
R49	1-216-049-91	RES, CHIP	1.0K	5% 1/10W
R50	1-216-065-00	METAL CHIP	4.7K	5% 1/10W
R51	1-216-065-00	METAL CHIP	4.7K	5% 1/10W
R53	1-249-429-11	CARBON	10K	5% 1/4W
R55	1-216-162-00	RES, CHIP	33	5% 1/8W
R56	1-249-393-11	CARBON	10	5% 1/4W
R91	1-216-295-91	METAL CHIP	0	5% 1/10W (AEP,UK,AED)
R92	1-216-073-00	METAL CHIP	10K	5% 1/10W (AEP,UK,AED)
R94	1-216-073-00	METAL CHIP	10K	5% 1/10W (AEP,UK,AED)

TCB TRANSFORMER A TRANSFORMER B

Ref. No.	Part No.	Description	Remark
		< VARIABLE RESISTOR >	
RV41	1-238-601-11	RES, ADJ, CARBON 22K (AM TUNING LEVEL)	
RV42	1-238-600-11	RES, ADJ, CARBON 10K (FM TUNING LEVEL)	
		< TERMINAL >	
TM1	1-537-488-11	TERMINAL BOARD (ANTENNA)	
		< VIBRATOR >	
X21	1-760-549-11	VIBRATOR, CRYSTAL	
X41	1-760-220-11	FILTER, CERAMIC (10.7MHz)	
X42	1-527-981-00	FILTER, CERAMIC (450kHz)	
X43	1-577-075-11	OSCILLATOR, CERAMIC (456kHz)	
**********			
*	1-658-764-11	TRANSFORMER A BOARD **********	
	1-533-293-11	FUSE HOLDER	
		< CONNECTOR >	
CN851	1-564-321-00	PIN, CONNECTOR 2P	
		< FUSE >	
⚠ F851	1-532-285-00	FUSE,TIME LAG (1.25A / 250V)	
**********			
*	1-658-765-11	TRANSFORMER B BOARD **********	
	1-533-293-11	FUSE HOLDER	
		< CONNECTOR >	
* CN852	1-564-527-11	PLUG, CONNECTOR 12P	
		< FUSE >	
⚠ F853	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ F854	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ F855	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ F856	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
**********			
		MISCELLANEOUS **********	
5	1-533-293-11	FUSE HOLDER	
⚠ CNP801	1-574-805-11	CORD, POWER (EXCEPT UK)	
⚠ CNP801	1-696-570-21	CORD, POWER (UK)	
* E801	4-942-204-01	PLATE, GROUND	
FL501	1-517-483-11	INDICATOR TUBE, FLUORESCENT	
⚠ F851	1-532-285-00	FUSE,TIME LAG (1.25A / 250V)	
⚠ F853	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ F854	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ F855	1-532-203-00	FUSE,TIME LAG (2A / 250V)	
⚠ F856	1-532-203-00	FUSE,TIME LAG (2A / 250V)	

Ref. No.	Part No.	Description	Remark
⚠ T801	1-429-258-11	TRANSFORMER, POWER (EXCEPT UK)	
⚠ T801	1-429-643-11	TRANSFORMER, POWER (UK)	
**********			
		ACCESSORIES & PACKING MATERIALS **********	
	1-473-463-11	COMMANDER, STANDARD (RM-SW55)	
	1-501-804-11	ANTENNA (FM)	
	1-776-017-11	CORD (WITH CONNECTOR) (17P) (SYSTEM CONTROL 1)	
	1-776-018-11	CODE (WITH CONNECTOR) (7P) (SYSTEM CONTROL 2)	
	4-941-762-11	COVER (MLY), BATTERY (FOR RM-SW55)	
*	4-979-069-01	CUSHION (STR) (FRONT)	
*	4-979-070-01	CUSHION (STR) (REAR)	
*	4-980-779-01	CARTON, INDIVIDUAL	
**********			

****
HARDWARE LIST
****

#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S
#2	7-682-548-04	SCREW +BVTT 3X8 (S)
#3	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S
#4	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

9-960-415-31

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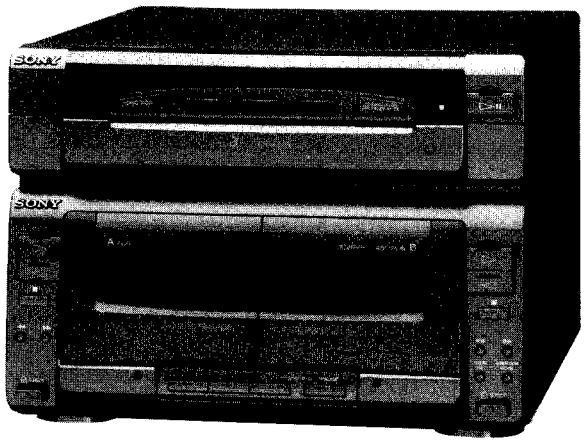
HCD-W55

SERVICE MANUAL

AEP Model
UK Model



● HCD-W55 is the deck, CD section in MHC-W55/W77AV.

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CD Section	Model Name Using Similar Mechanism	NEW
	CD Mechanism Type	CDM38-5BD19
	Base Unit Name	BU-5BD19
Tape deck Section	Model Name Using Similar Mechanism	HCD-H901AV
	Tape Transport Mechanism Type	TCM-220WR2

SPECIFICATIONS

CD player section

System — Compact disc digital audio system
Laser — Semiconductor laser (λ =780nm)
Emission duration : continuous
Laser output
Max 44.6μW*
*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with 7 mm aperture.
Wavelength
780–790 nm
Frequency response
2Hz–20kHz (±0.5 dB)
Signal-to-noise ratio
More than 80 dB
Dynamic range
More than 90 dB
CD OPTICAL DIGITAL OUT
(Square optical connector jack, rear panel)
Wavelength 600 nm
Output Level −18 dBm

Tape player section

Recording system
4-track 2-channel stereo
Frequency response
(DOLBY NR OFF)
40–13,000 Hz (±3 dB), using Sony TYPE I cassette
40–14,000 Hz (±3 dB), using Sony TYPE II cassette
40–15,000 Hz (±3 dB), using Sony TYPE IV cassette
Wow and flutter
0.1% WRMS ±0.3% (DIN)

Design and specifications are subject to change without notice.

MICROFILM

MINI Hi-Fi COMPONENT SYSTEM

SONY®

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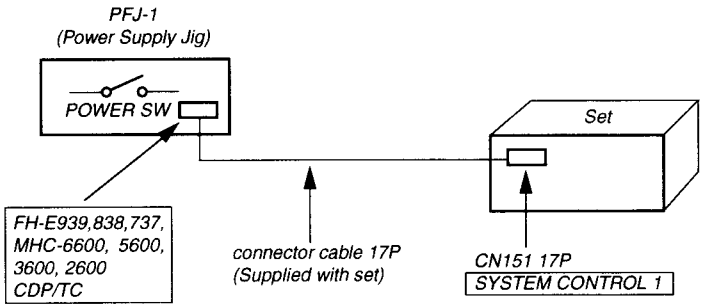
SERVICING NOTE

- Supplying power during servicing

This equipment cannot operate without using a separate power supply. Connect to the STR-W55/W77AV when performing service work.
To apply power set the SYSTEM POWER switch on the Tuner/Amp to ON.
When other units are not available use the PFJ-1 power supply jig.
When using the PFJ-1, simultaneously press the CD STOP button and the DECK A ▶▶ (fast rightward) button to turn on the power.

[Connection Diagram]

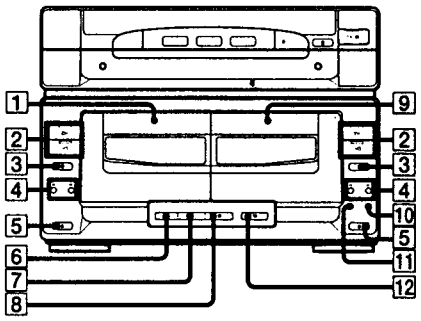


SECTION 1
GENERAL

This section is extracted from instruction manual.

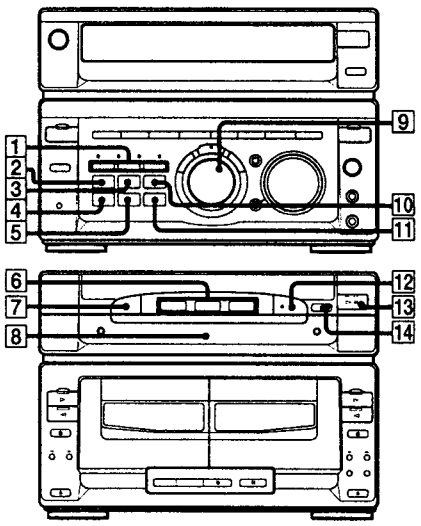
Front Panel

Tape player section



1 DECK A (14)
2 ◁/▷ (forward/reverse side play) buttons*
3 ■ (stop) button
4 ◀◀/▶▶ (fast leftward/fast rightward) buttons
5 ⏏ EJECT buttons
6 CD SYNCHRO button
7 HIGH SPEED DUBBING button
8 ● REC button*
9 DECK B
10 DIRECTION MODE button
11 DOLBY NR button
12 ❚❚ PAUSE button*

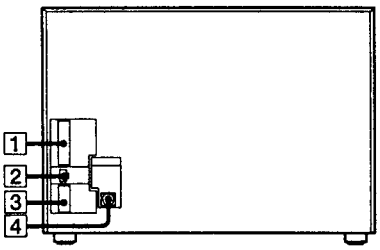
CD player section



1 CLIP A-C buttons
2 CLIP PLAY button
3 CLIP ERASE button
4 1/ALL DISCS button
5 PLAY MODE button
6 DISC 1-3 buttons
7 DISC SKIP button
8 Disc tray
9 ⏮/⏭ (search forward/search backward) JOG dial
10 EDIT button
11 REPEAT button
12 ⏏ OPEN/CLOSE/EX-CHANGE button
13 ▷❚❚ (play/pause) button*
14 ■ (stop) button

Rear panel

Tape/CD section



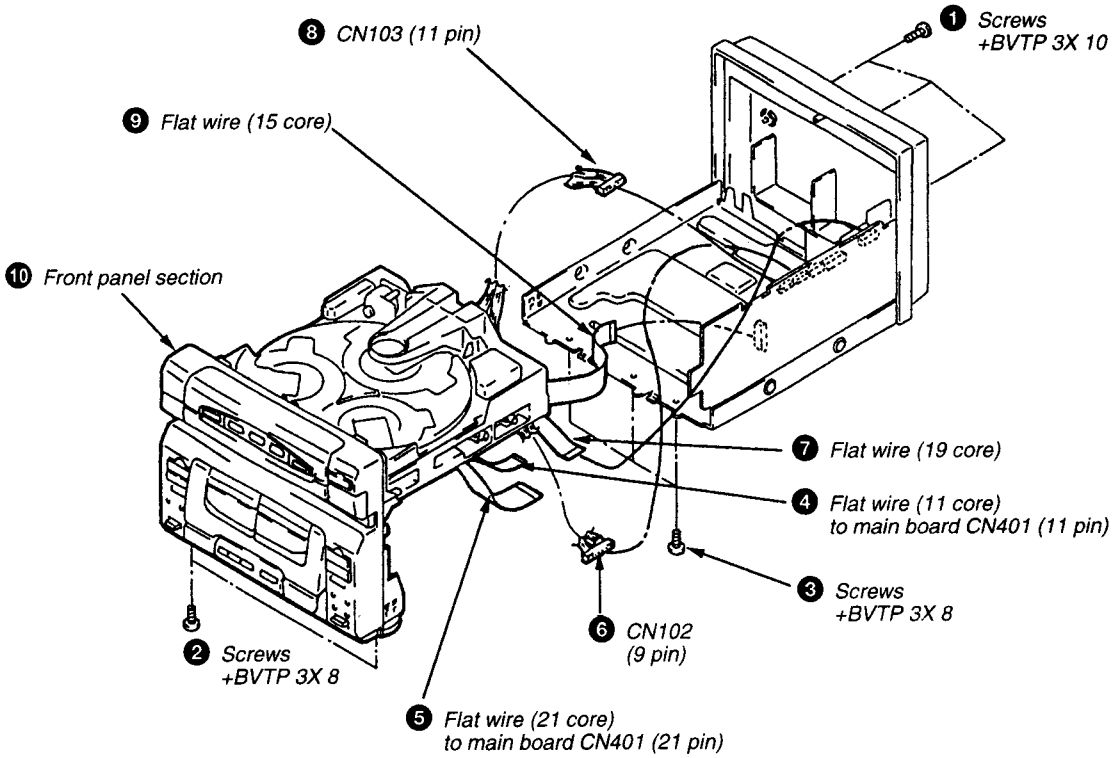
1 SYSTEM CONTROL 1 terminal
2 AU BUS connector
3 SYSTEM CONTROL 2 terminal
4 CD OPTICAL DIGITAL OUT terminal

SECTION 2
DISASSEMBLY

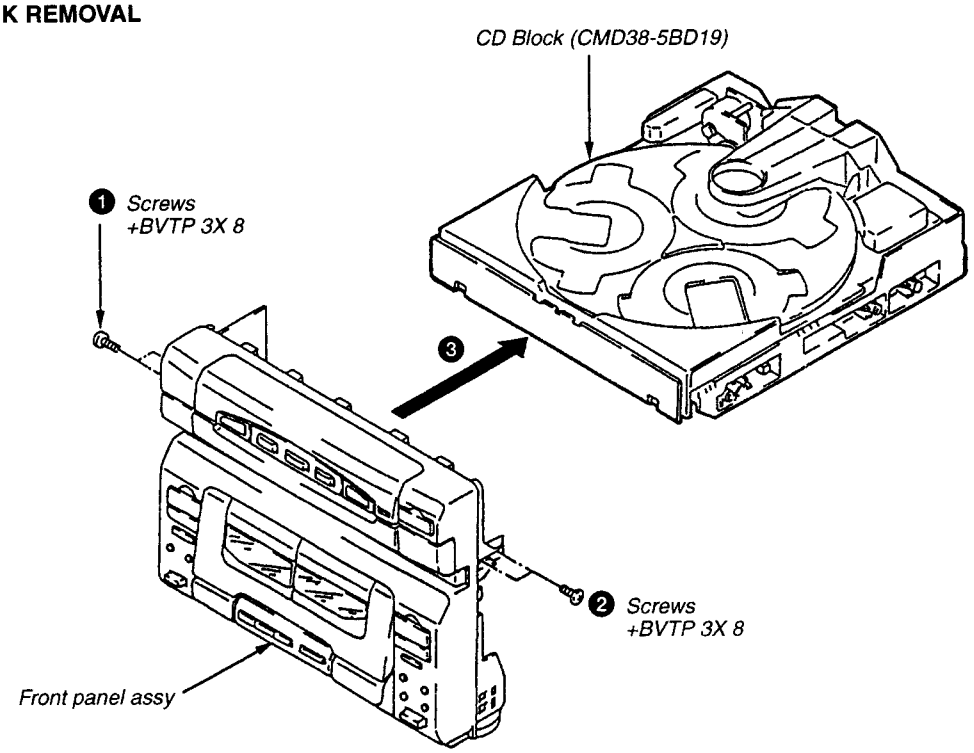
Note : Follow the disassembly procedure in the numerical order given.

CASE
Unscrew the five case attachment in the screws (case) (M3X8) X4, (+BV 3X8) X 1 and remove the case.

2-1. FRONT PANEL SECTION REMOVAL

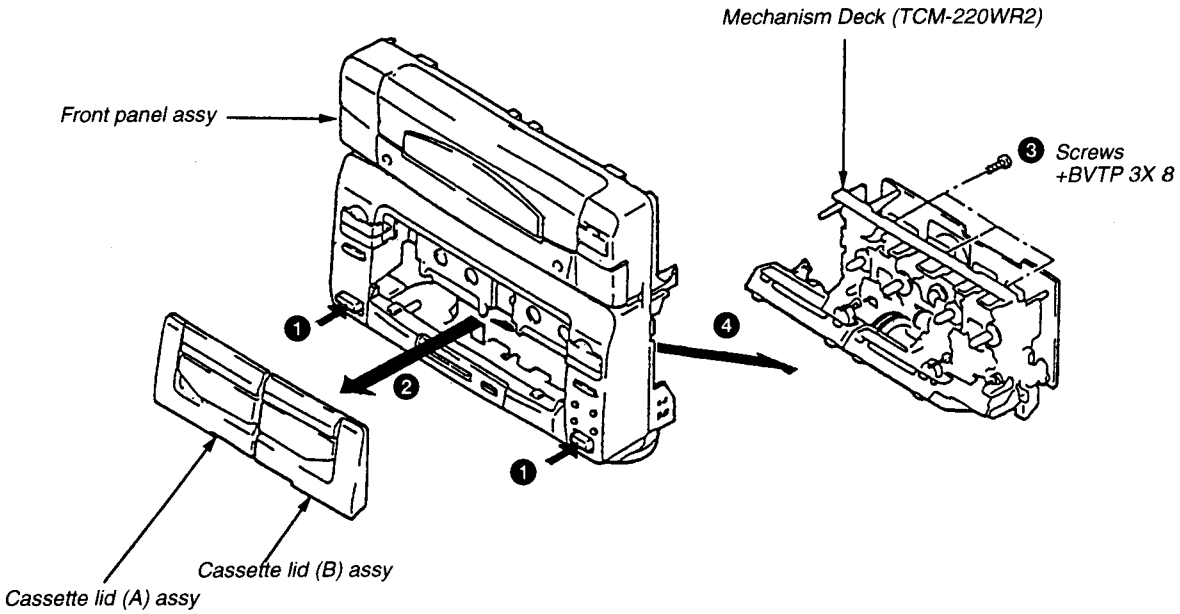

❽ CN103 (11 pin)
❶ Screws +BVTP 3X 10
❾ Flat wire (15 core)
❿ Front panel section
❼ Flat wire (19 core)
❹ Flat wire (11 core) to main board CN401 (11 pin)
❸ Screws +BVTP 3X 8
❻ CN102 (9 pin)
❷ Screws +BVTP 3X 8
❺ Flat wire (21 core) to main board CN401 (21 pin)

2-2. CD BLOCK REMOVAL



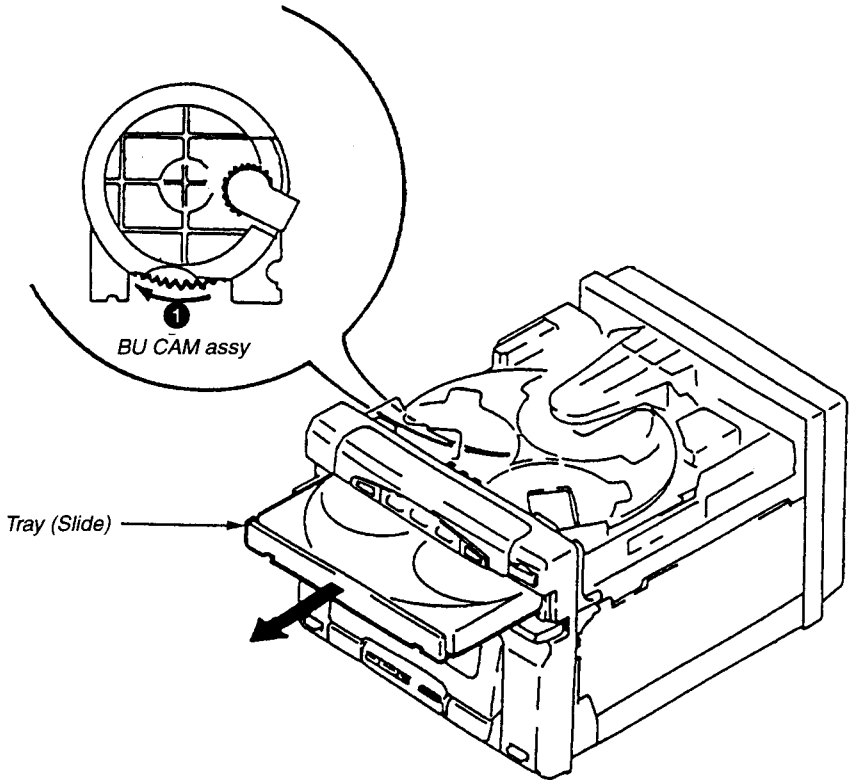
2-3. CASSETTE LID (A) / (B) ASSY, MECHANISM DECK REMOVAL

❶ Press the EJECT button and open the cassette lid.



● **Tray (Slide) getting out procedure on the power supply is OFF**

Rotate the BU CAM assembly in the direction of the arrow and pull out the slide.



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
   record/playback head pinch roller
   erase head rubber belts
   capstan idlers
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

● Torque Measurement

Mode	Torque Meter	Meter Reading
Forward	CQ-102C	36 to 61 g•cm (0.50 – 0.84 oz•inch)
Forward Back Tension	CQ-102C	2 to 6 g•cm (0.028– 0.083 oz•inch)
Reverse	CQ-102RC	36 to 61 g•cm (0.50 – 0.84 oz•inch)
Reverse Back Tension	CQ-102RC	2 to 6 g•cm (0.028 – 0.083 oz•inch)
FF, REW	CQ-201B	61 to 143 g•cm (0.85– 1.99 oz•inch)

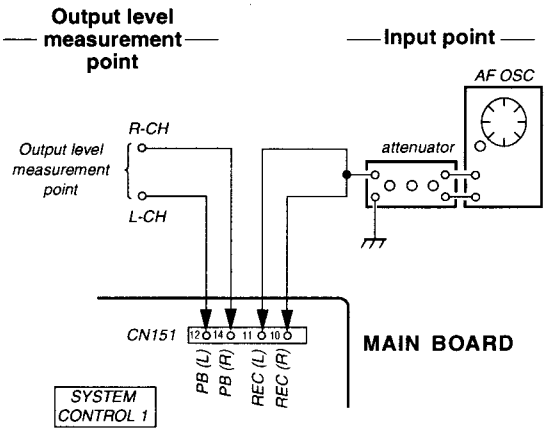
● Tape Tension Measurement

Mode	Tension Meter	Meter Reading
Forward	CQ-403A	more than 100g (3.53 oz)
Reverse	CQ-403R	more than 100g (3.53 oz)

3-2. ELECTRICAL ADJUSTMENTS

DECK SECTION

1. The adjustment should be performed in the publication. (Be sure to make playback adjustment at first.)
2. The adjustment and measurement should be performed for both L-CH and R-CH.
   ● Switch position
   DOLBY NR switch : OFF
   FUNCTION button : OFF
   EFECT switch : OFF
   DBFB switch : OFF
3. Deck section electrical adjustments are made in test mode by pressing CD STOP, DECK A STOP, and DECK B STOP at the same time.
4. Input point and output level measurement point.



● Tast tape

Tape	Contents	Use
P-4-A100	10 kHz, –10dB	Head Azimuth Adjustment
P-4-L300	315Hz, 0dB	Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

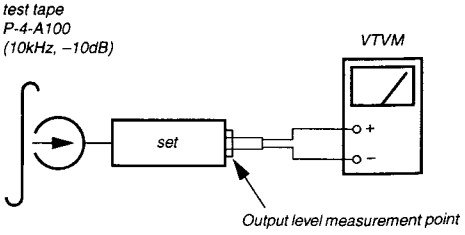
0 dB=0.775V

Record/Playback Head Azimuth Adjustment

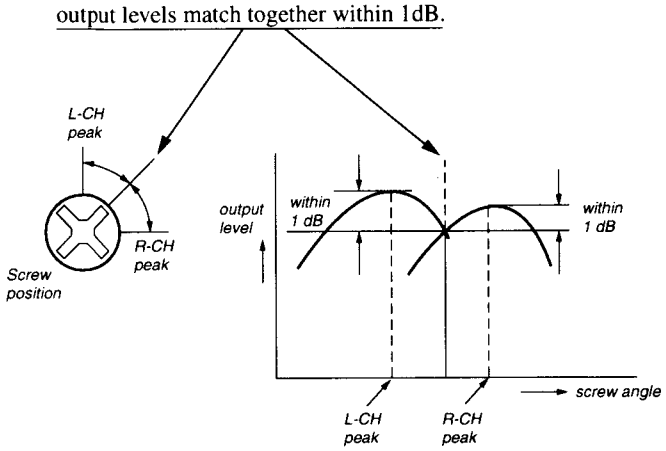
DECK A **DECK B**

Procedure :

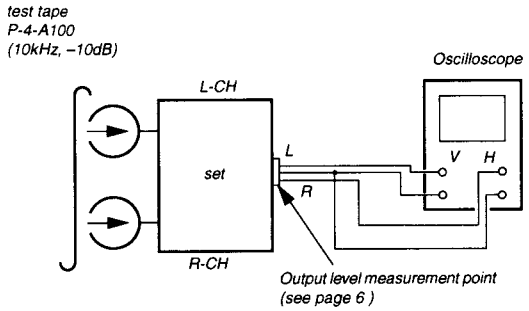
1. Forward Playback mode
   Reverse Playback mode

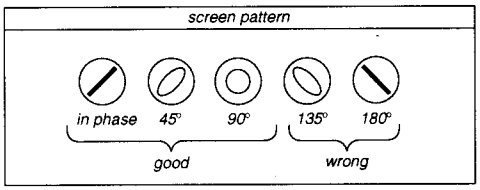


2. Turn the adjustment screw for the maximum output levels. If these levels do not match,turn the adjustment screw until both of output levels match together within 1dB.



3. Playback Mode

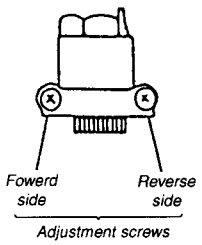




4. Change the review playback mode and repeat the steps 1 to 3.
5. After the adjustment, lock the adjustment screw with suitable locking compound.

Adjustment Location :

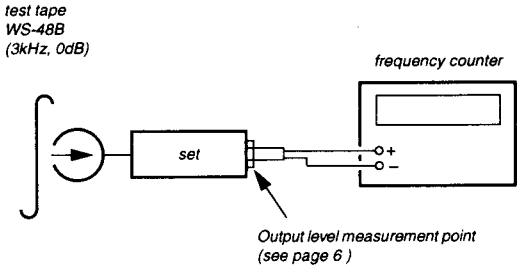
– record/playback head (Deck A and B) –



Tape Speed Adjustment DECK A DECK B

Procedure :

- Perform high speed adjustment before normal speed adjustment.
  Mode : Playback



Speed	Deck	Adjustment	Frequency counter
*High	A	RV652	5,970 to 6,030Hz
	B	RV652	
Normal	A	RV651	2,940 to 3,090Hz
	B	RV651	

* Continue to press HIGH SPEED DUBBING switch (S266) in playback mode : High speed playback.

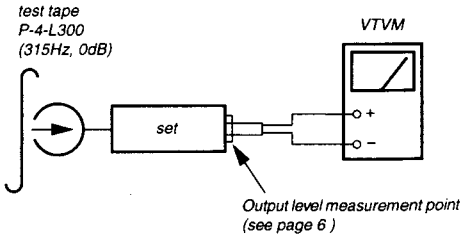
Frequency difference between the begining and the end of the tape should be within ± 3%.
Frequency difference between deck A and deck B the bigining of the tape should be within 1.5%.

Adjustment Location : AUDIO board.
(see page 8)

Playback Level Adjustment DECK A DECK B

Procedure :

–FWD Playback Mode–



Deck A is RV311 (L-CH) and RV411 (R-CH), deck B is RV301 (L-CH) and RV401 (R-CH) so that adjustment within adjustment level as follows.

Adjustment Level :
LINE OUT level : – 3.5 ± 2.0dB (0.41 to 0.65V)
Level Difference between Channels : within 0.5dB

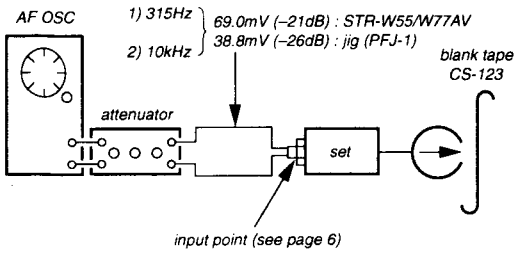
Confirm the OUTPUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : AUDIO board.
(see page 8)

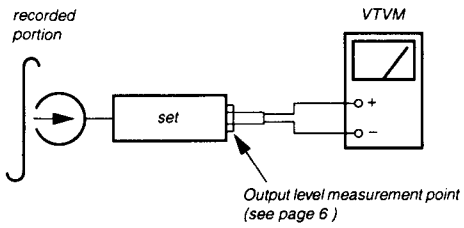
Record Bias Adjustment DECK B

Procedure :

1. Record mode



2. Playback mode



3. Confirm playback the signal recorded in step1 become adjustment level as follows.
4. If these levels do not adjustment level, adjustment the RV341 (L-CH) and RV441 (R-CH) to repeat step 1 and 4.

Adjustment level : Playback output of 315Hz to playback output of 10kHz : 0 ± 1.0dB (0 ± 4.5mV).

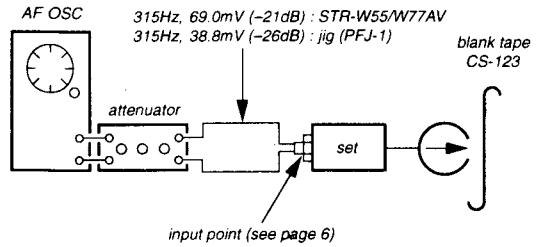
Adjustment Location : AUDIO board.

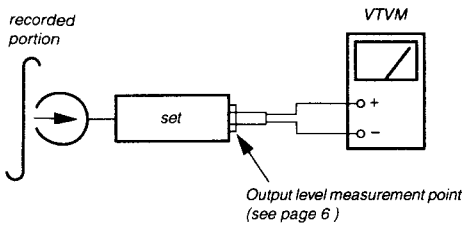
Record Level Adjustment DECK B

FUNCTION button : CD

Procedure :

1. Record mode





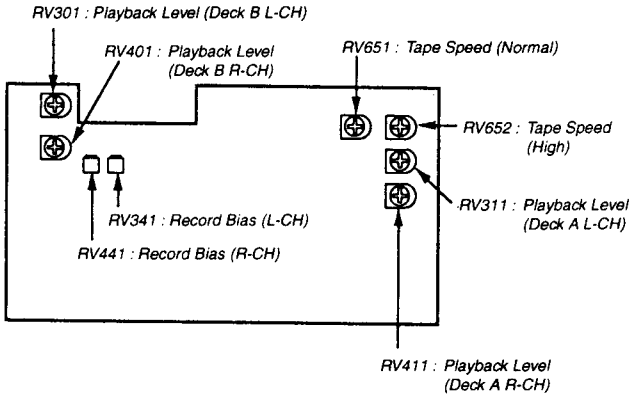
2. Playback mode
3. Confirm playback the signal recorded in step1 become adjustment level as follows.
4. If these levels do not adjustment level, adjustment the RV401 (L-CH) and RV451 (R-CH) to repeat step 1 and 4.

Adjustment Level :
OUTPUT level : – 28dB ± 1.0dB (27.5 to 34.6mV)

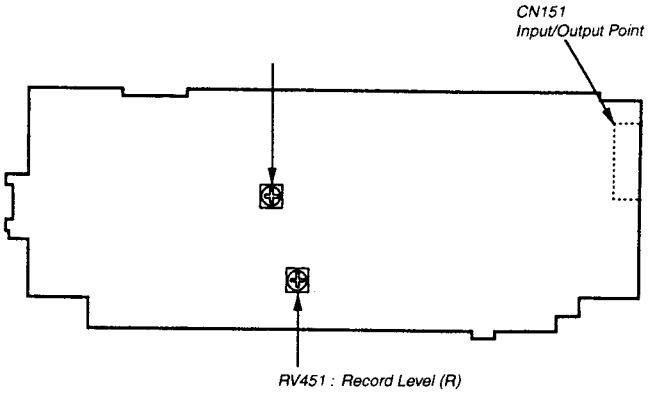
Adjustment Location : MAIN board

Adjustment Location :

[AUDIO BOARD] – Component side –


RV301 : Playback Level (Deck B L-CH)
RV401 : Playback Level
(Deck B R-CH)
RV651 : Tape Speed (Normal)
RV652 : Tape Speed
(High)
RV311 : Playback Level
(Deck A L-CH)
RV341 : Record Bias (L-CH)
RV441 : Record Bias (R-CH)
RV411 : Playback Level
(Deck A R-CH)

[MAIN BOARD] – Component side –



CD SECTION

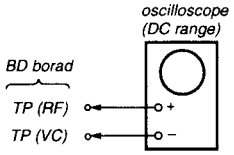
Note :

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

Focus Bias Adjustment

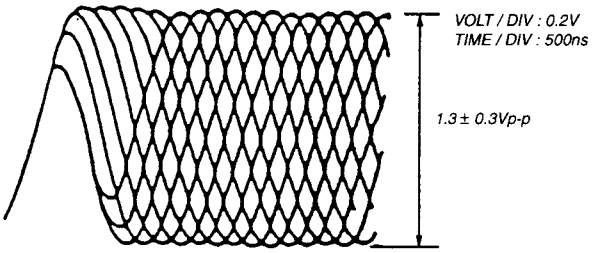
This adjustment is to be done when the optical block is replaced.

Adjustment procedure :



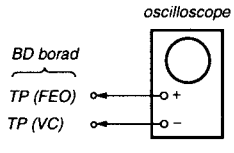
1. Connect oscilloscope to test point TP (VC) and TP (RF) on main board.
2. Turned power switch ON. (Stop mode)
3. Put disc (YEDS-18) in and press the ▷II button.
4. Adjust RV101 so that the oscilloscope waveform is as shown in the figure below (eye pattern).
   A good eye pattern means that the diamond shape (◊) in the center of the waveform can be clearly distinguished.

   ● RF signal reference waveform (eye pattern)



   When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

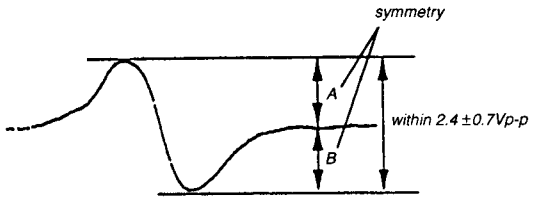
S-Curve Check



Procedure :

1. Connect oscilloscope to test point TP (FEO) and BD board.
2. Connect between test point TP (FOK) and GND by lead wire.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and turned Power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4±0.7Vp-p.

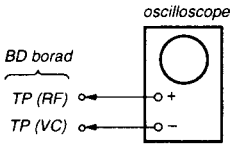
   S-curve waveform



6. After check, remove the lead wire connected in step 2.

Note : ● Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
● Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check



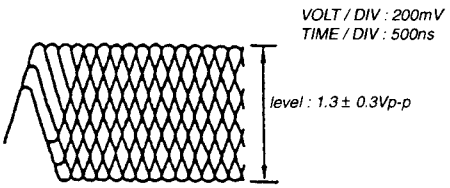
Procedure :

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turned Power switch on.
3. Put disc (YEDS-18) in and press the ▷II button.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

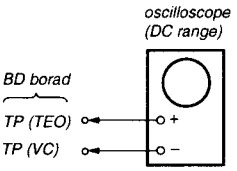
Note :

Clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RF signal waveform



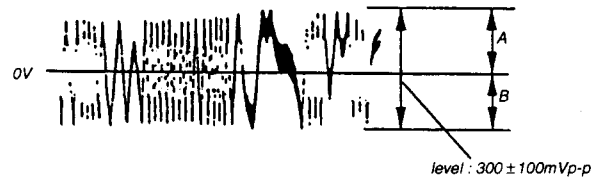
E-F Balance Check



Procedure :

1. Ground CD main board IC301 pin ㊴ (JW201) with the lead wire.
2. Connect oscilloscope to test point TP (TEO) on BD board.
3. Turned Power switch on.
4. Put disc (YEDS-18) in and press the ▷II button.
5. Confirm that the osilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse waveform



specified value : ● $\frac{A-B}{2(A+B)}$ X100 = less than ±7%

● A+B = 300 ±100mVp-p

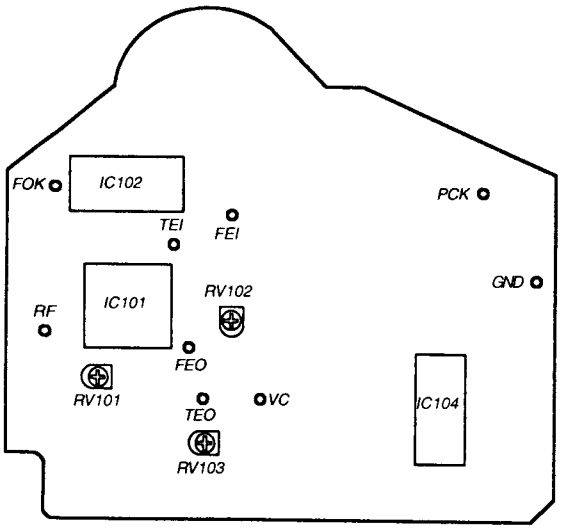
6. Remove the lead wire connected in step 1.

Focus/Tracking Gain Adjustment (RV102, RV103)

This gain has a margin, so even if it is slightly off. There is no problem. Therefore, do not perform, this adjustment.
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

Adjustment Location :

[BD BOARD] – Conductor side –



SECTION 4
EXPLANATION OF IC TERMINALS

IC101 TMP87CP64YF TTX-983 (SYSTEM CONTROL)

Pin No.	Pin name	I/O	Description
1	Vss	–	Power supply. (Ground)
2	XOUT	–	Oscillator connection terminal. (10MHz)
3	XIN	–	Oscillator connection terminal. (10MHz)
4	RESET	–	Reset signal input terminal.
5	XTOUT	I	Not used. (Ground)
6	XTIN	I	Not used. (Ground)
7	TEST	–	Not used. (OPEN)
8	AC OUT	I	Power supply DET input terminal.
9–12	D0–D3	I/O	Data signal INPUT/OUTPUT of the system control.
13	LED1	O	B-FWD LED drive.
14	LED2	O	B-REV LED drive.
15	LED3	O	B-PAUSE LED drive.
16	LED4	O	A-REV LED drive.
17–19	E0–E2	I	Rotary encorder input terminal.
20	OUT SW	I	Loading out switch input.
21	LOAD IN	O	Loading motor control output. (Load input)
22	LOAD OUT	O	Loading motor control output. (Load output)
23	TBL L	O	Table motor control output.
24	TBL R	O	Table motor control output.
25	SCSOR	I	SUB code SYNC input from DSP. (IC103)
26	TBLSENS	I	Table sensor input.
27	W1CLK	I	Clock input of the system control.
28	RDY	O	Ready signal input of the system control.
29	D. F. L	O	Serial data output to the digital filter. (IC104)
30	SENS	I	Sens signal input from the DSP. (IC103)
31	XRST	O	CD reset signal output terminal.
32	NC	O	Terminal for the check.
33	TEST	I	CD test mode terminal. "L" : ADJ mode.
34	NC	I	Not used. (OPEN)
35	NC	O	Not used. (OPEN)
36	NC	I	Not used. (OPEN)
37	NC	O	Not used. (OPEN)
38	CD. CLK	O	Serial data transfer clock output to DSP (IC103) and digital filter. (IC104)
39	TEST	I	CD test mode terminal. "L" : ADJ2 mode.
40	CD. DATA	O	Serial data output to DSP (IC103) and digital filter. (IC104)
41	NC	I	Not used. (OPEN)
42	NC	O	Not used. (OPEN)
43	F. SW	O	High-pass gain select output of the focus servo.
44	SQ. CLK	O	SUB code Q read clock output to the DSP. (IC103)
45	SQ DATA	I	SUB code Q data input from DSP. (IC103)
46	DSP L	O	Serial data latch output to the DSP. (IC103)
47	PU NC	–	Terminal for test mode.
48	VAREF	–	Power supply. (+5V)
49	VAss	–	Power supply for analog. (Ground)
50	Vss	–	Power supply. (Ground)

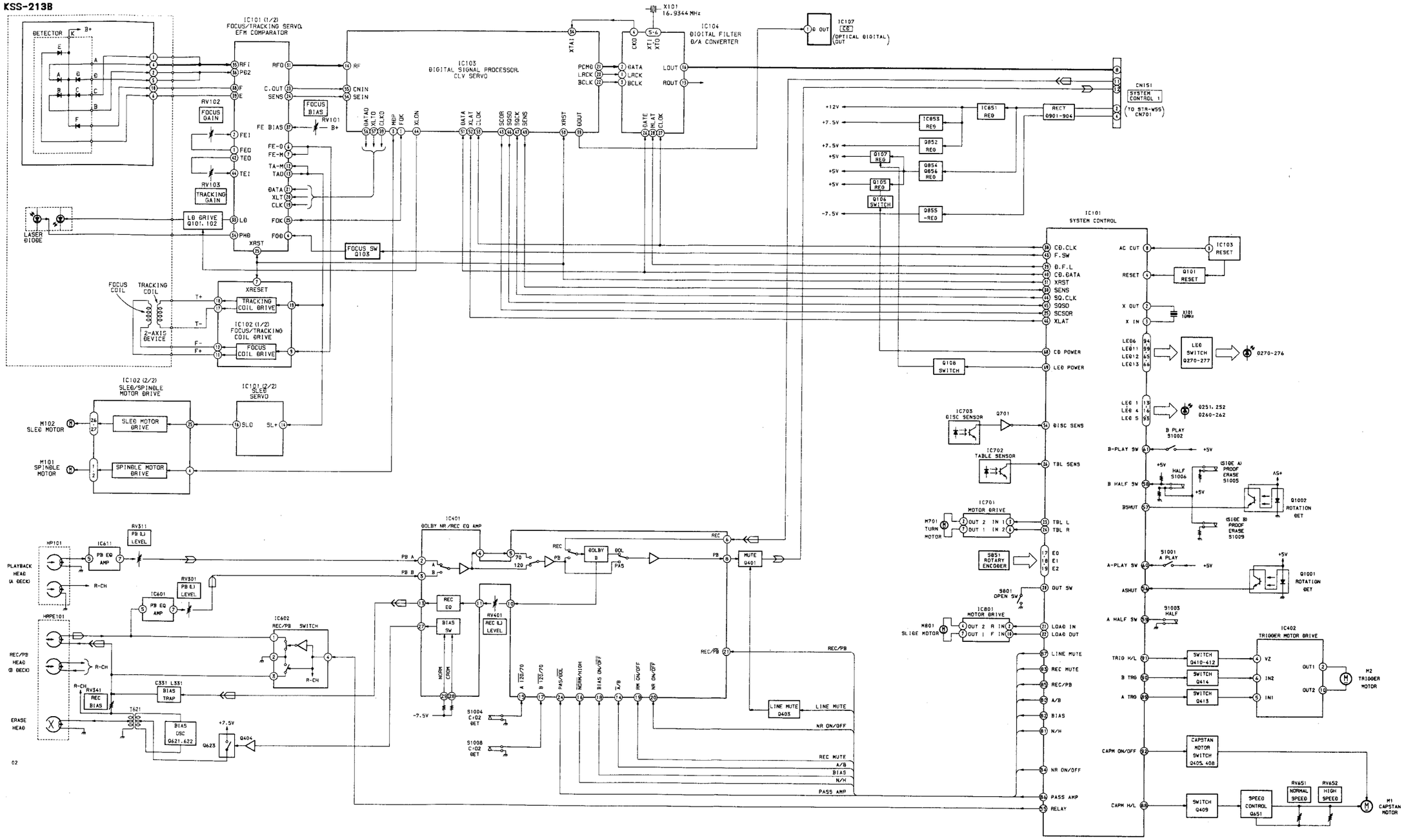
Pin No.	Pin name	I/O	Description
51	VDD	–	Power supply. (+5V)
52	SPEC	I	Terminal for mechanism selection. (Ground connection)
53	DESTINATION	I	Terminal for model selection. (OPEN)
54	DISC SENS	I	Disc sensor input terminal.
55	RELAY	O	REC/PB head selector signal output.
56	A SHUT	I	Deck A reel detect.
57	B SHUT	I	Deck B reel detect.
58	B HALF SW	I	Deck B cassette detect.
59	A HALF SW	I	Deck A cassette detect.
60	A PLAY SW	I	Deck A play detect.
61	B PLAY SW	I	Deck B play detect.
62–64	KEY A–C	I	Key data input. (A/D converter input)
65, 66	NC	O	Not used. (OPEN)
67	POWER	O	Not used. (OPEN)
68	CD POWER	O	CD power switch output.
69	LED POWER	O	LED power switch output.
70, 71	NC	O	Not used. (OPEN)
72	NC	I	Not used. (OPEN)
73–79	NC	O	Not used. (OPEN)
80	A/B	O	Deck A/B selection output.
81	N/H	O	NORMAL/HIGH selection output.
82	BIAS	O	Bias ON/OFF selection output.
83	REC MUTE	O	REC mute ON/OFF selection output.
84	NR. ON/OFF	O	NR ON/OFF selection output.
85	REC/PB	O	REC/PB selection output.
86	PASS. AMP	O	Dolby pass signal output.
87	LINE MUTE	O	Line mute signal output.
88	CAPM. H/L	O	Capstan motor HIGH/LOW selection output.
89	A TRG	O	Trigger motor control output.
90	B TRG	O	Trigger motor control output.
91	TRG H/L	O	Trigger motor control output.
92	CAPM ON/OFF	O	Capstan motor ON/OFF output.
93	LED5	O	A-FWD LED drive.
94	LED6	O	CD PLAY LED drive.
95	LED7	O	CD PAUSE LED drive.
96	LED8	O	DISC3 LED drive.
97	LED9	O	DISC3 LED drive.
98	LED10	O	DISC2 LED drive.
99	LED11	O	DISC2 LED drive.
100	VDD	–	Power supply. (+5V)

5-1. BLOCK

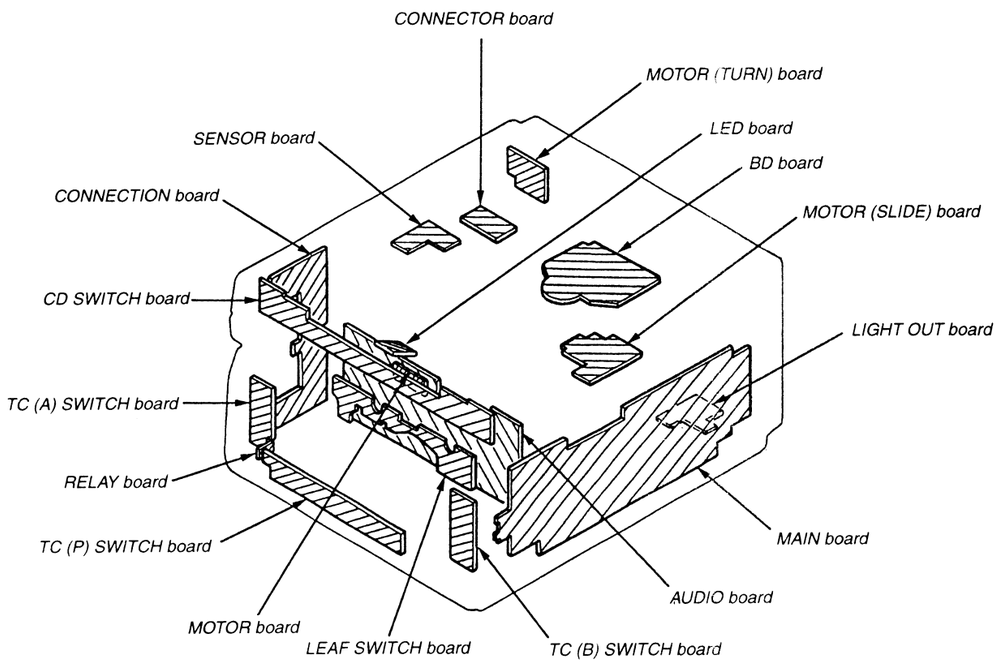
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM

OPTICAL PICK-UP BLOCK
KSS-213B



5-2. CIRCUIT BOARDS LOCATION



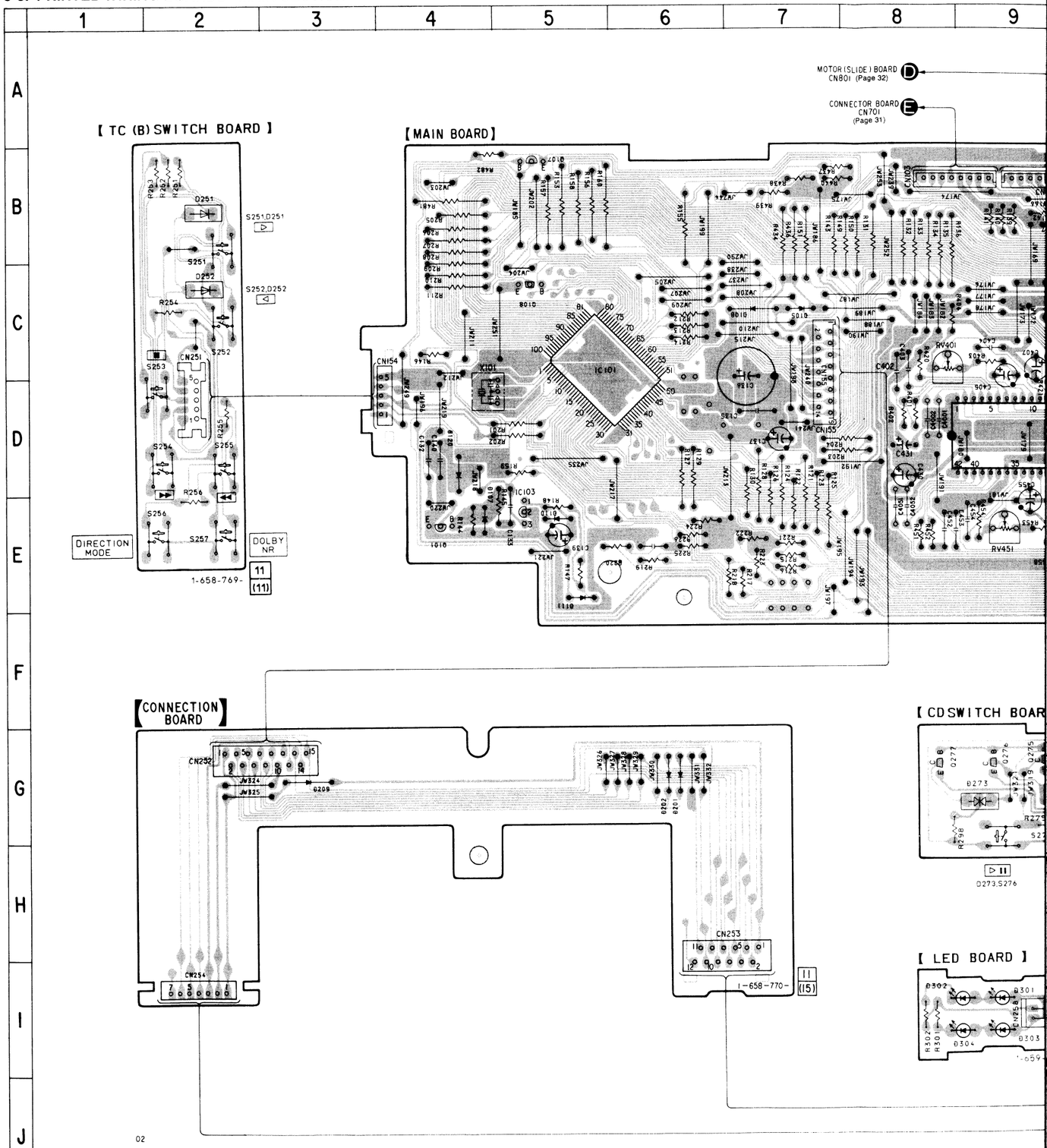
• SEMICONDUCTOR LOCATION

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D105	C-7	D274	G-15	IC101	C-5	Q275	G-9
D106	E-12	D275	G-13	IC103	E-5	Q276	G-9
D107	E-4	D276	G-12	IC107	D-19	Q277	G-8
D108	C-7	D301	I-9	IC401	D-9	Q401	D-11
D110	E-5	D302	I-9	IC402	C-12	Q403	D-12
D111	E-5	D303	I-9	IC851	C-13	Q404	E-10
D120	D-4	D304	I-9	IC853	D-13	Q405	C-11
D201	G-6	D401	C-11			Q408	C-10
D202	G-6	D402	C-10	Q101	E-4	Q409	C-10
D209	G-3	D403	D-12	Q105	E-12	Q410	C-12
				Q106	F-12		
D251	B-2	D404	D-12	Q107	B-5	Q411	C-11
D252	C-2	D855	D-13	Q108	C-5	Q412	D-11
D260	F-21	D857	E-14			Q413	D-11
D261	G-21	D858	D-14	Q270	G-17	Q414	D-12
D262	I-14	D901	B-14	Q271	G-17	Q451	E-11
				Q272	G-17		
D270	G-15	D902	B-14	Q273	G-16	Q852	D-13
D271	G-14	D903	D-14	Q274	G-9	Q854	E-12
D272	G-12	D904	D-14			Q855	D-15
D273	G-9					Q856	E-13

Note:

- ○— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.

5-3. PRINTED WIRING BOARDS –MAIN SECTION–



MOTOR (SLIDE) BOARD D
CN801 (Page 32)

CONNECTOR BOARD E
CN701
(Page 31)

B LEAF SWITCH BOARD
CN1001 (Page 27)

A AUDIO BOARD
CN601
(Page 28)

C BD BOARD
CNU102
(Page 33)

CN151
SYSTEM CONTROL 1

CN152
AU BUS

CN153
SYSTEM CONTROL 2

11 (15)

1-658-766-

【LIGHT OUT BOARD】

IC107
OPTICAL DIGITAL OUT

CN107

1-658-772-

11 (15)

【TC (A) SWITCH BOARD】

【CDSWITCH BOARD】

CN255

CN257

WHT
GRY

D273,S276 ▷II

■

OPEN/CLOSE ≜

DISC3
D272,276
S273

DISC2
D271,275
S272

DISC1
D270,274
S271

DISC SKIP

1-658-767-

11 (11)

【LED BOARD】

WHT
GRY

1-658-770-

11 (15)

【TC (P) SWITCH BOARD】

PAUSE D262

PAUSE S268

REC S267

HI-SPEED DUBBING S266

CD SYNCHRO S265

1-658-771-

11 (11)

【RELAY BOARD】

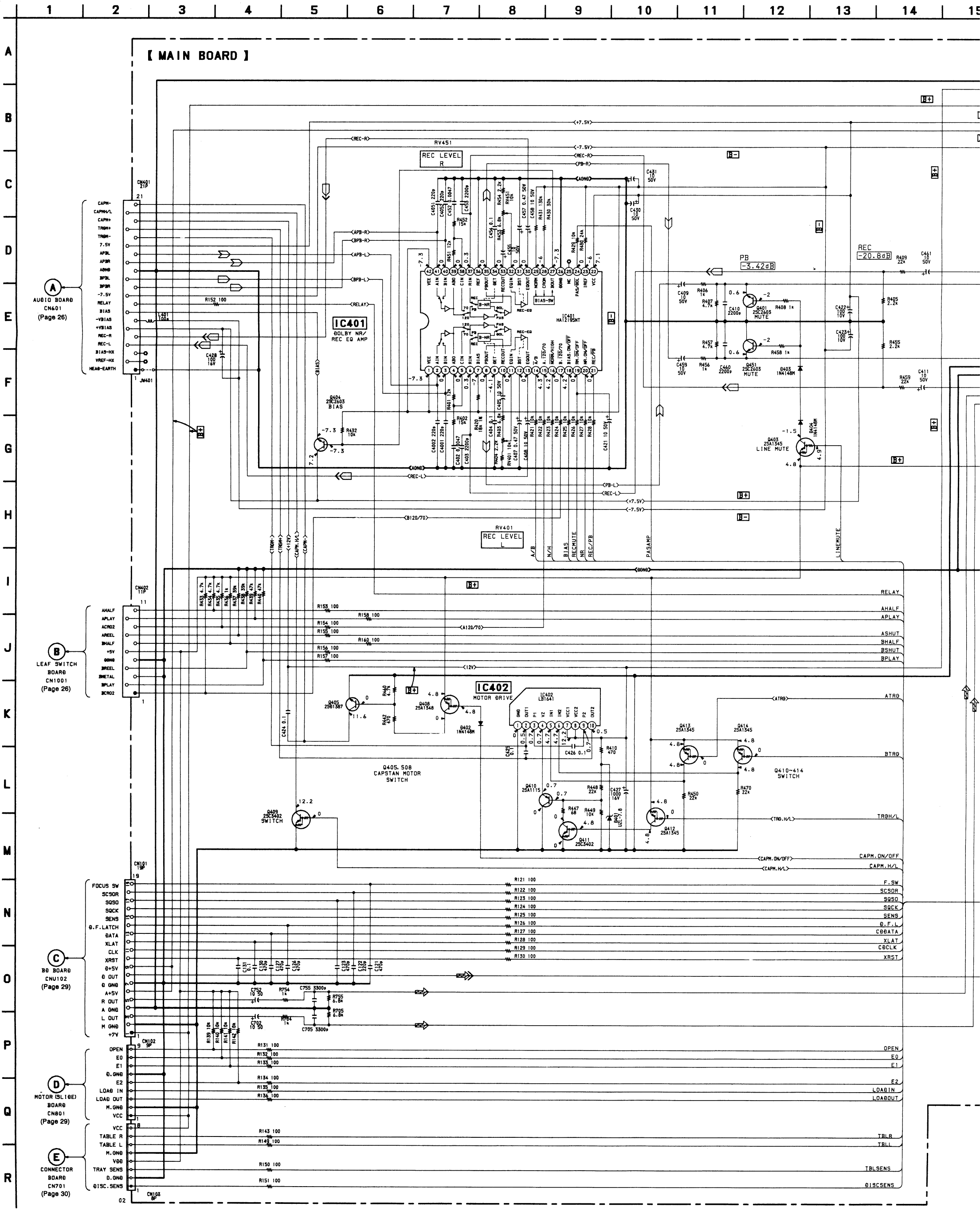
1-658-768-

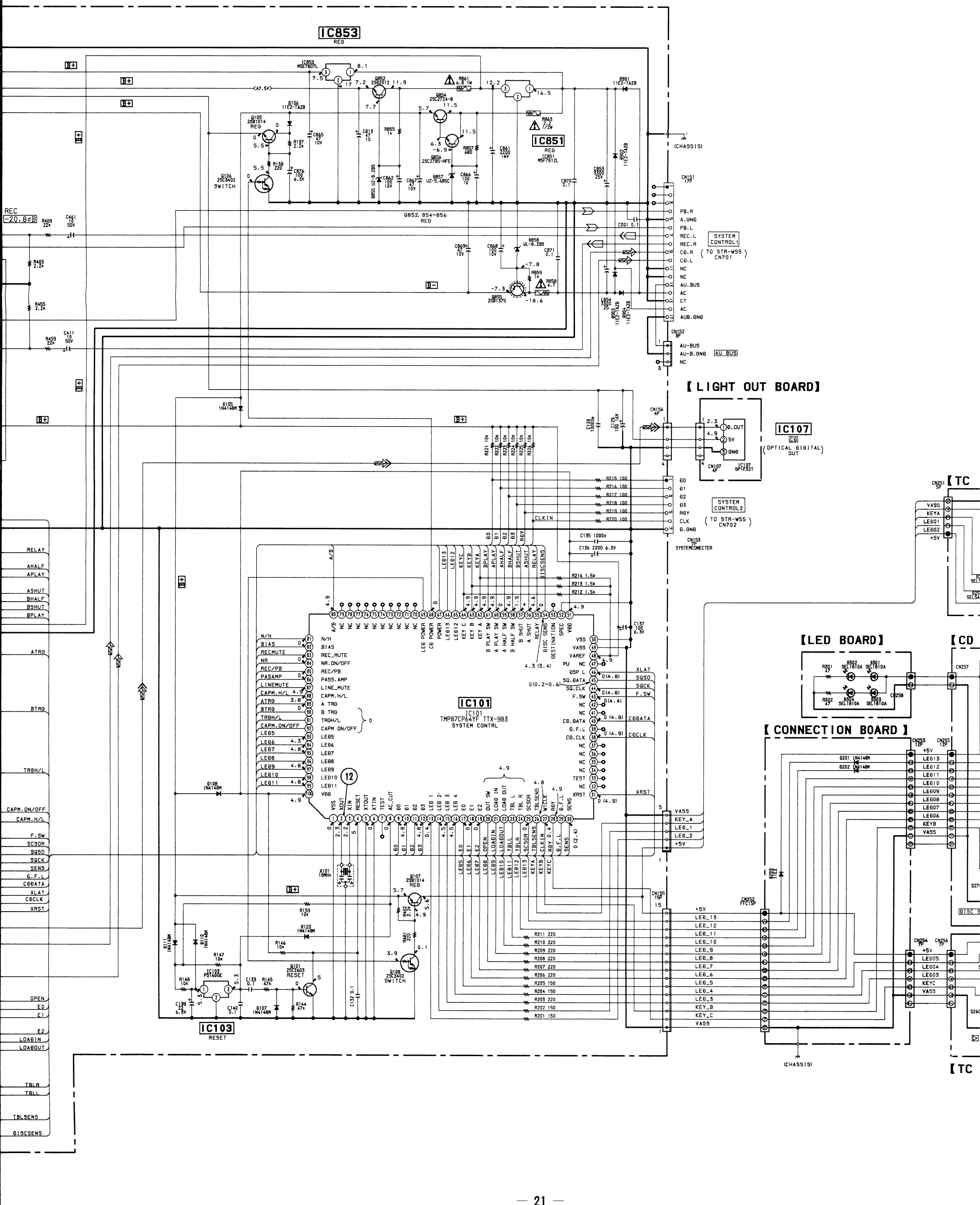
11 (11)

(CHASSIS)

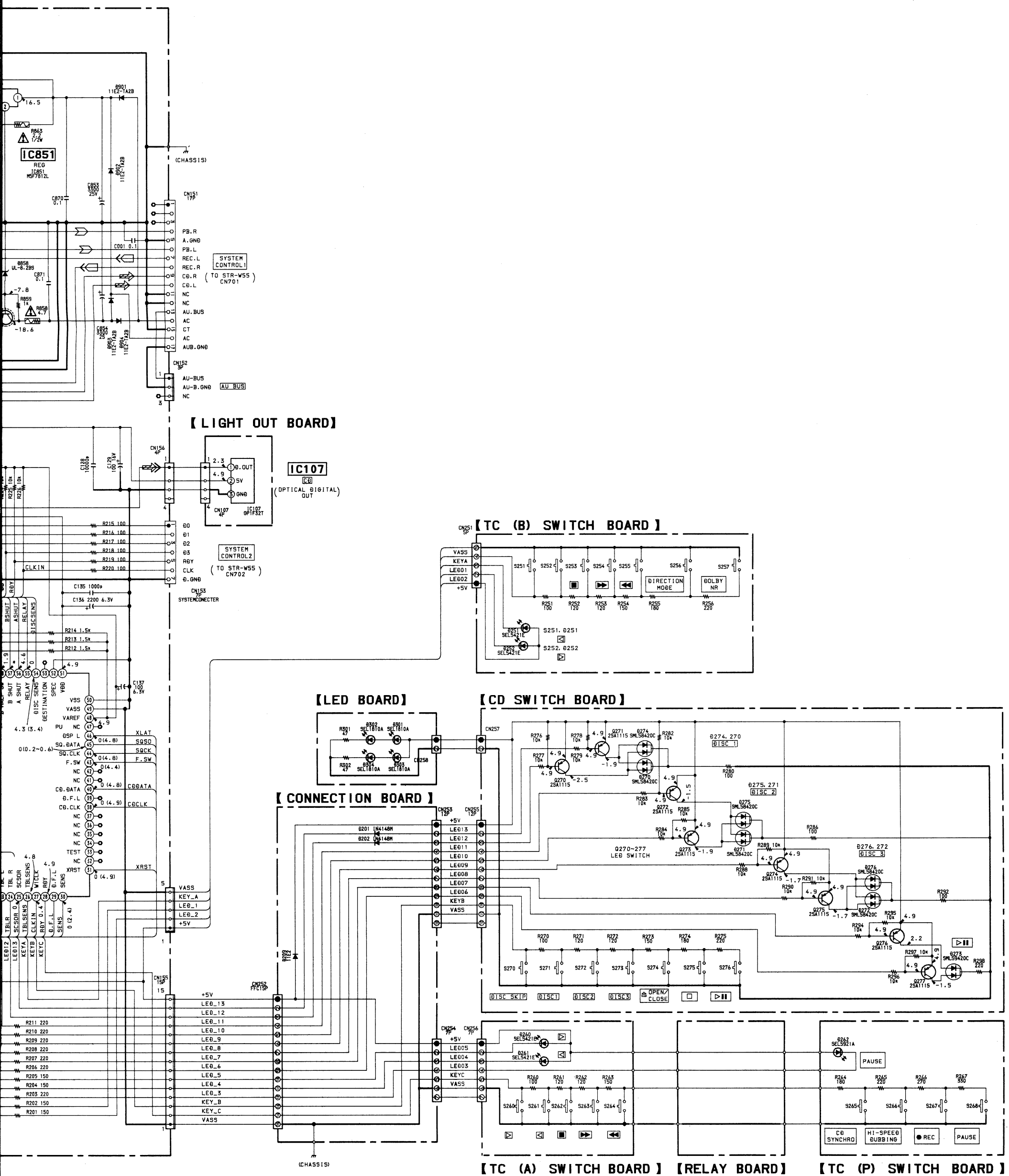
5-4. SCHEMATIC DIAGRAM –MAIN SECTION–

● Refer to page 35 for IC Block Diagram.



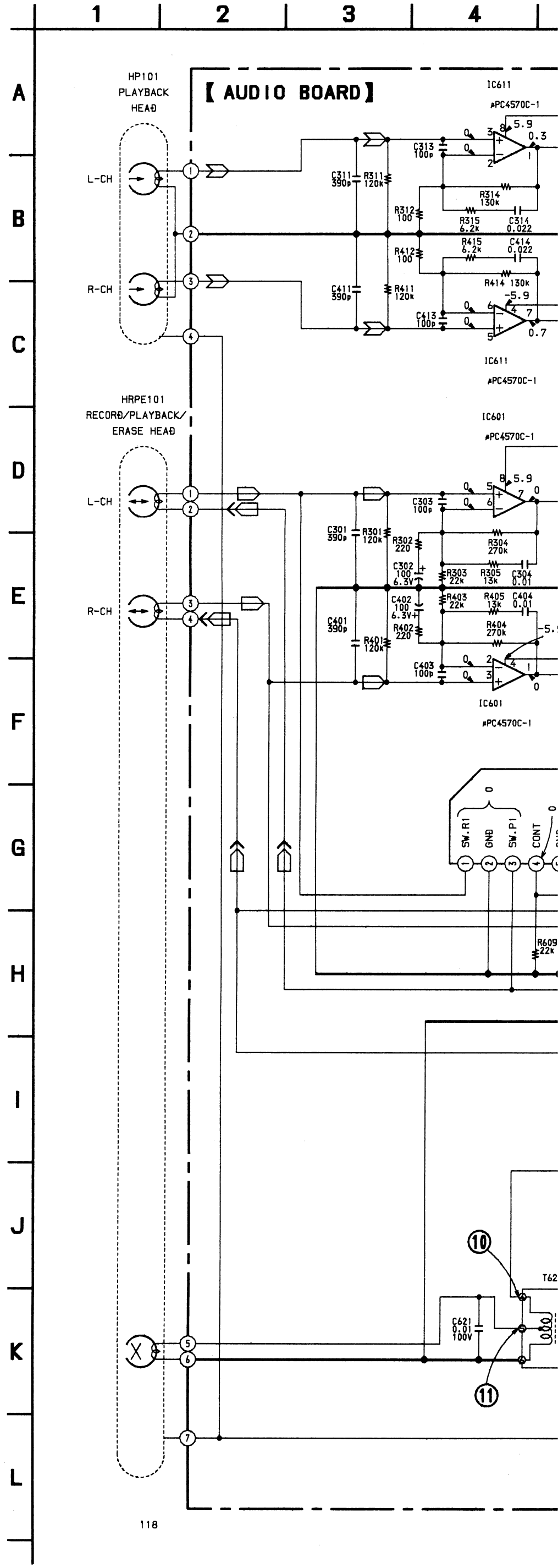

IC853
REG
IC853 M5E7807L
Q852 2SB2012
R861 6.8 1W
Q854 2SC2724-B
R863 2.2 1/2W
IC851
REG
IC851 M5F7812L
B901 11E2-TA2B
B902 11E2-TA2B
B903 11E2-TA2B
B904 11E2-TA2B
B106 11E2-TA2B
Q105 2SB1014 REG
Q106 2SC3402 SWITCH
R137 2.2k
R138 220
C865 47 10V
C876 100 6.3V
C813 47 10
R855 1k
C862 100 10V
C867 47 10V
C866 100 10
C861 2200 16V
C870 0.1
C853 3300 25V
B855 UZ-8.2B5
Q856 2SC2785-HFE
B857 UZ-5.6B5C
Q852. 854~856 REG
(CHASSIS)
CN151 17P
PB.R
A.GND
PB.L
REC.L
REC.R
C0.R
C0.L
NC
NC
AU.BUS
AC
CT
AC
AUB.GND
SYSTEM CONTROL1
(TO STR-W55 CN701)
CN152 5P
AU-BUS
AU-B.GND
AU BUS
NC
REC
-20.8dB
R409 22k
C461 10 50V
R405 2.2k
R455 2.2k
C411 10 50V
R459 22k
C001 0.1
B858 UL-8.2B5
C869 47 10V
C868 100 10V
C871 0.1
R859 1k
R858 4.7
Q855 2SB1375
B105 1N4148M
【LIGHT OUT BOARD】
CN156 4P
C128 1000p
C125 10 16V
IC107
C0
(OPTICAL DIGITAL OUT)
CN107 4P
IC107 6P1F32T
B0.OUT
5V
GND
SYSTEM CONTROL2
(TO STR-W55 CN702)
CN153 7P
SYSTEMCONECTER
R221 10k
R222 10k
R223 10k
R224 10k
R225 10k
R226 10k
R215 100
R216 100
R217 100
R218 100
R219 100
R220 100
B0
B1
B2
B3
RBY
CLK
B.GND
CLKIN
C135 1000p
C136 2200 6.3V
C137 100 6.3V
R214 1.5k
R213 1.5k
R212 1.5k
【TC
CN251 5P
VASS
KEYA
LE001
LE002
+5V
【LED BOARD】
【CD
R301 47
R302 47
B302 SEL1810A
B301 SEL1810A
B303 SEL1810A
B304 SEL1810A
C0258
CN257
【CONNECTION BOARD】
CN253 12P
CN255 12P
B201 1N4148M
B202 1N4148M
+5V
LE013
LE012
LE011
LE010
LE009
LE008
LE007
LE006
KEYB
VASS
CN254 7P
CN256 7P
LE005
LE004
LE003
KEYC
VASS
CN252 FFC15P
CN155 15P
+5V
LE0_13
LE0_12
LE0_11
LE0_10
LE0_9
LE0_8
LE0_7
LE0_6
LE0_5
LE0_4
LE0_3
KEY_B
KEY_C
VASS
VASS
KEY_A
LE0_1
LE0_2
+5V
(CHASSIS)
R211 220
R210 220
R209 220
R208 220
R207 220
R206 220
R205 150
R204 150
R203 220
R202 150
R201 150
IC101
IC101
TMP87CP64YF TTX-983
SYSTEM CONTRL
A/B
N/H
BIAS
RECMUTE
NR
REC/PB
PASAMP
LINEMUTE
CAPM.H/L
ATRG
BTRG
TRGH/L
CAPM.ON/OFF
LE05
LE06
LE07
LE08
LE09
LE010
LE011
VDD
LE0 POWER
C0 POWER
LED13
LED12
KEYC
KEYB
KEYA
B PLAY SW
A PLAY SW
B HALF SW
B SHUT
A SHUT
RELAY
DISC SENS
DESTINATION SPEC
VDD
VSS
VAREF
PU NC
OSP L
SQ.DATA
SQ.CLK
F.SW
NC
NC
C0.DATA
D.F.L
C0.CLK
NC
NC
NC
NC
TEST
NC
XRST
XLAT
SQSO
SQCK
F.SW
C0DATA
C0CLK
XRST
XOUT
XIN
RESET
XTOUT
XTIN
TEST
AC_CUT
B0
B1
B2
B3
LED 1
LED 2
LED 3
LED 4
E0
E1
E2
OUT SW
LOAD IN
LOAD OUT
TBLL
TBLR
SCSOR
TBLSENS
CLKIN
WTCLK
RBY
D.F.L
SENS
X101 10MHz
IC103 P5T600E
IC103
RESET
Q107 2SB1014 REG
Q101 2SC2603 RESET
Q108 2SC3402 SWITCH
R159 10k
R462 2.2k
R461 47
R146 10k
R147 10k
R148 10k
R145 47k
R144 47k
C133 0.1
C139 22 6.3V
C140 0.1
C132 0.1
B107 1N4148M
B108 1N4148M
B120 1N4148M
B110 1N4148M
B111 1N4148M
B+
B-
RELAY
AHALF
APLAY
ASHUT
BHALF
BSHUT
BPLAY
ATRG
BTRG
TRGH/L
CAPM.ON/OFF
CAPM.H/L
F.SW
SCSOR
SQSO
SQCK
SENS
D.F.L
C0DATA
XLAT
C0CLK
XRST
OPEN
E0
E1
E2
LOADIN
LOADOUT
TBLR
TBLL
TBLSENS
DISCSENS

22 23 24 25 26 27 28 29 30 31 32 33 34 35



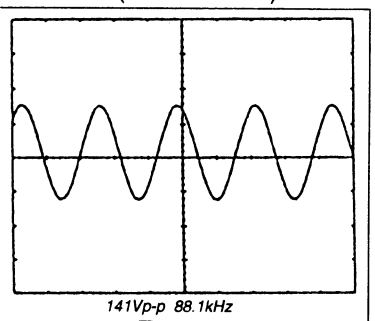
5-5. SCHEMATIC DIAGRAM –TC SECTION–

● Refer to page 35 for IC Block Diagram



● **WAVEFORMS** (TC SECTION)

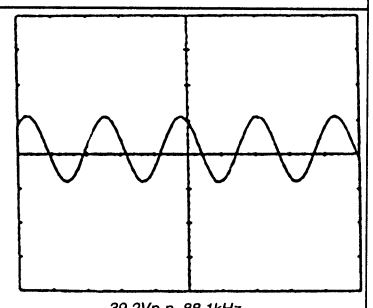
⑩



141Vp-p 88.1kHz

T601

⑪



39.2Vp-p 88.1kHz

T621

Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- : fusible resistor.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- B+ : B+ Line
- B– : B– Line
- : adjustment for repair.
  no mark : PLAY (TC)
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : PB (DECK A)
  : PB (DECK B)
  : REC (DECK B)

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or IC Block Diagram.

4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13

IC611
μPC4570C-1
R611 220
C315 22 16V
RV311 2.2k
PB LEVEL L
C611 10 16V
R314 130k
R315 6.2k
C314 0.022
R415 6.2k
C414 0.022
C612 10 16V
R414 130k
RV411 2.2k
PB LEVEL R
C415 22 16V
R612 220
IC611
μPC4570C-1

IC611
PB AMP

B+ 7.4

IC601
μPC4570C-1
R601 220
C305 22
RV301 2.2k
PB LEVEL L
C601 10 16V
R304 270k
R303 22k
R305 13k
C304 0.01
R403 22k
R405 13k
C404 0.01
R404 270k
C602 10 16V
RV401 2.2k
PB LEVEL R
C405 22
R602 220
IC601
μPC4570C-1

IC601
PB AMP

B+ 7.4

B- -7.2

R608 220

IC602
REC/PB SWITCH
IC602
μPC1330HA

SW.R1 | GND | SW.P1 | CONT | GND | VCC | SW.P2 | GND | SW.R2
1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9

7.4

B+ 7.4

R609 22k

C331 120p 50V
L331 27mH
C332 330p
R331 12k
L431 27mH
C432 330p
C431 120p 50V
R431 12k

RV441 220k
REC BIAS R
C433 27p
RV341 220k
REC BIAS L
C333 27p

Q621, 622
BIAS OSC

Q623
BIAS ON/OFF SWITCH
Q623
2SB1387
-6.8 (-1.6)
7.4 (7.4)
-7.2 (-1)
B+ 7.4

Q621
2SC2001
-6.8 (-1.6)
-6.8 (-7.1)
-7.2 (-7.1)
7.2 (-7.1)
-6.8 (-7.1)
-6.8 (-1.6)

10
11
T621
C621 0.01 100V
C622 2.2 50V
Q622
2SC2001
R621 5.6
R622 5.6
C623 0.015
R623 18k
C624 0.0068
C628 0.01
R624 18k
C625 0.0068
R625 10k
C627 1 50V
C642 47 16V
B- -7.3

2 | 1
CN602

Q651
CAPSTAN MOTOR CONTROL

TAPE SPEED (HIGH)
B+ 12
Q651
2SA1345
5.4
R653 100k
-7 (5.3)
5.4 (0.5)
RV652 4.7k
R652 11k
RV651 4.7k
R651 11k
TAPE SPEED (NORMAL)

【 LEAF SWITCH BOARD 】

Q1001
NJL5165K-A
ROTATION DET-A
B+ 5
R1001 390
R1002 390

S1004 A HALF
S1005 A CrO2
S1006 REC A
S1007 B HALF
S1009 REC B
S1008 B CrO2
R1003 560
R1004 1.3k
R1005 300
S1001 A PLAY
S1002 B PLAY
B+ 5

B+ 7.4

B- -7.2

TAPE SPEED (HIGH)

TAPE SPEED (NORMAL)

Q651 CAPSTAN MOTOR CONTROL

Q651 2SA1345

R653 100k

RV652 4.7k

R652 11k

RV651 4.7k

R651 11k

5.4

5.4 (0.5)

-7 (5.3)

CN651

M1 CAPSTAN MOTOR

C651 0.0022

M2 TRIGGER MOTOR

【MOTOR BOARD】

CN601

1 CAPM-
2 CAPM H/L
CAPM+
TRGM+
5 TRGM-
6 V+ PB
APB LCH
APB RCH
9 GND PB
10 BPB LCH
BPB RCH
V- PB
RELAY
BIAS
15 V- BIAS
16 V+ BIAS
REC RCH
REC LCH
19 VREF HX
20 BIAS HX
21 HEADEARTH

A MAIN BOARD CN401 (Page 19)

【LEAF SWITCH BOARD】

Q1001 NJL5165K-A ROTATION DET-A

Q1002 NJL5165K-A ROTATION DET-B

R1001 390

R1002 390

S1004 A HALF

S1005 A CrO2

S1006 REC A

S1007 B HALF

S1009 REC B

S1008 B CrO2

R1003 560

R1004 1.3k

R1005 300

S1001 A PLAY

S1002 B PLAY

CN1001

1 A HALF
2 A PLAY
A CrO2
A REEL
B HALF
5 +5V
GND
B REEL
B METAL
B PLAY
10 B CrO2
11

B MAIN BOARD CN402 (Page 19)

R625 10k

C627 1 50V

C642 47 16V

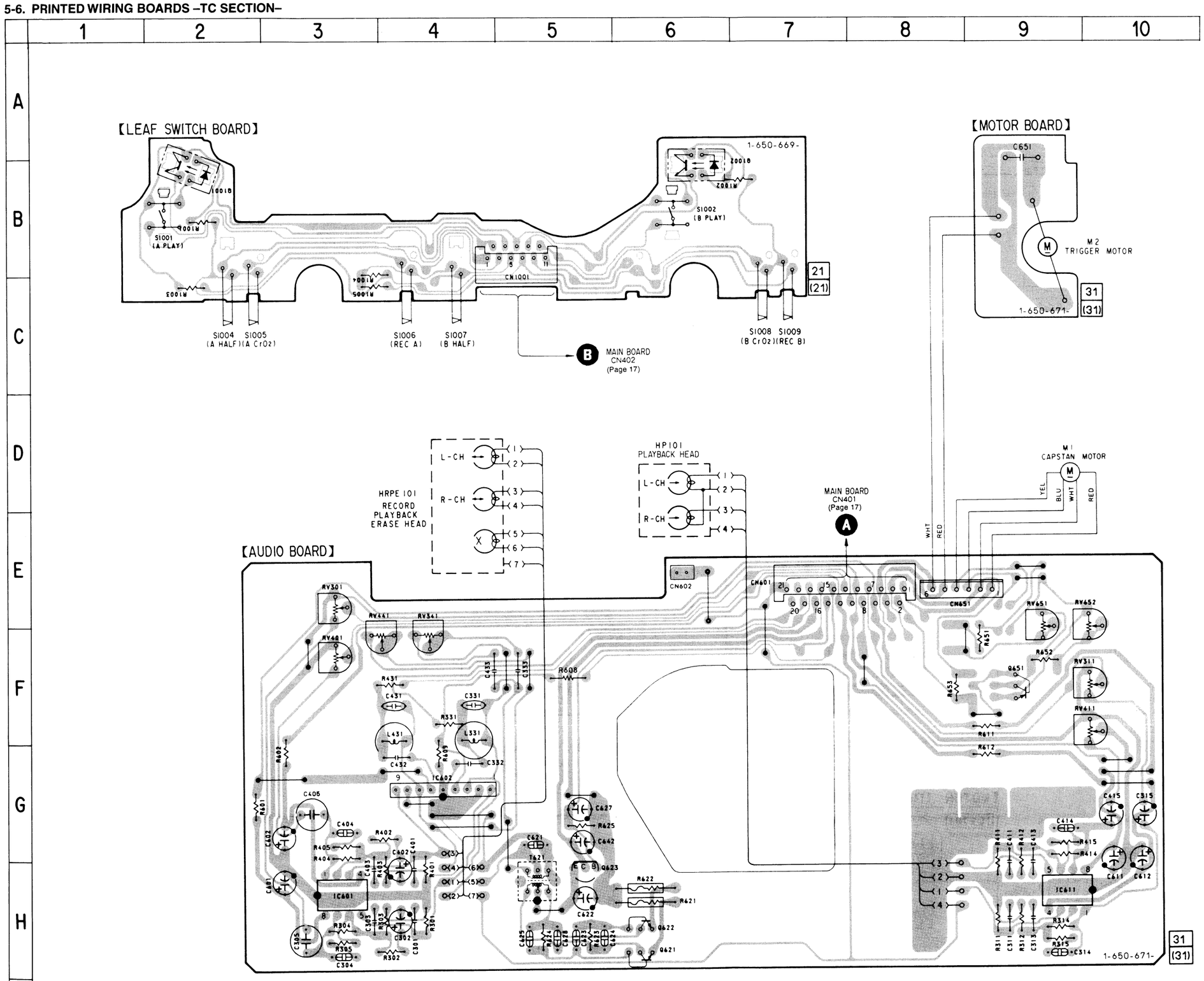
B+ 7.4

7.4 (7.4)

B- -7.3

2 1 CN602

5-6. PRINTED WIRING BOARDS –TC SECTION–



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● **SEMICONDUCTOR LOCATION**

Ref. No.	Location
IC601	H-3
IC602	G-4
IC611	H-9
Q621	H-6
Q622	H-6
Q623	H-5
Q651	F-9
Q1001	B-2
Q1002	B-6

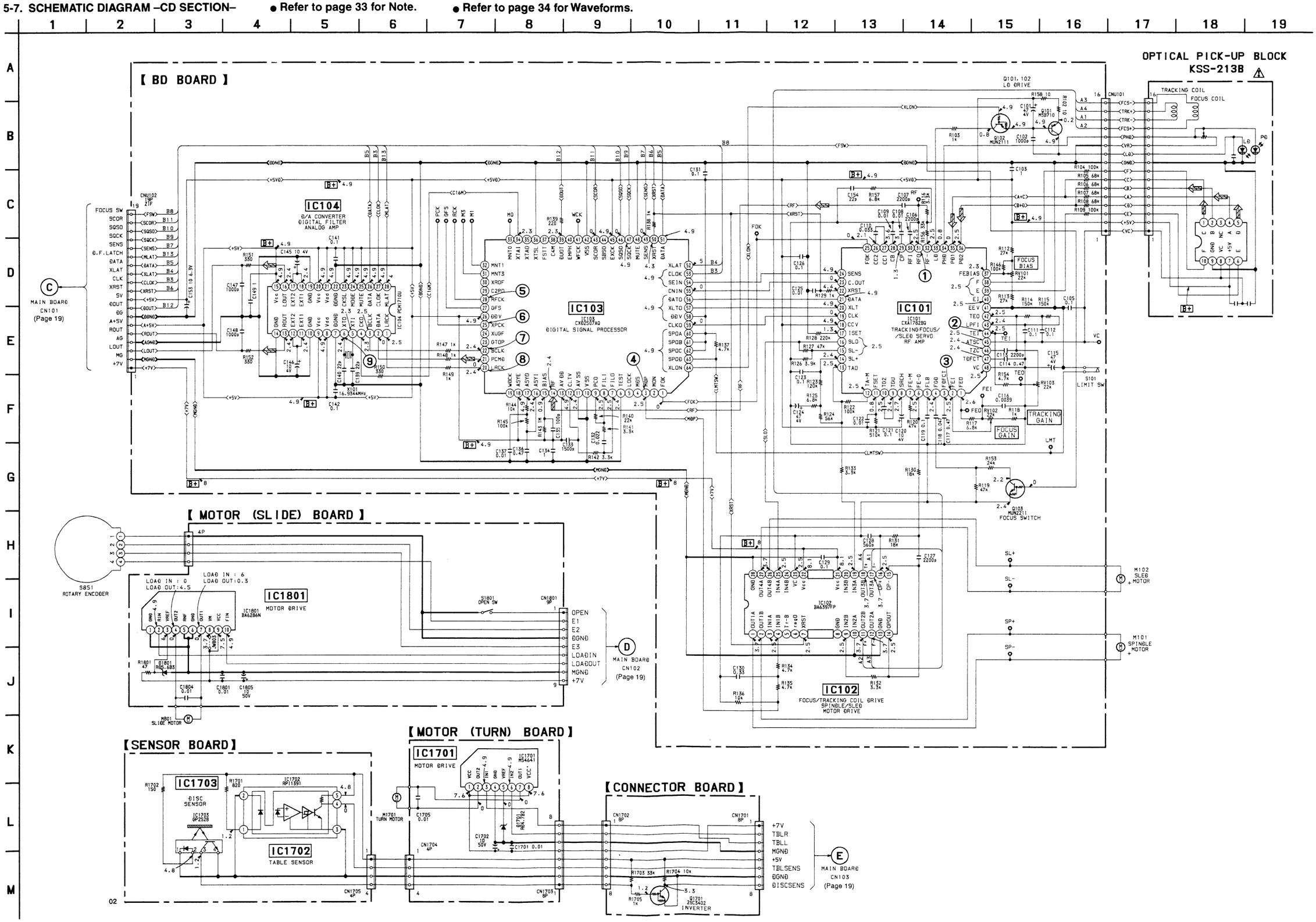
Note:

- ○— : parts extracted from the component side.
- ▒▒▒ : Pattern on the side which is seen.

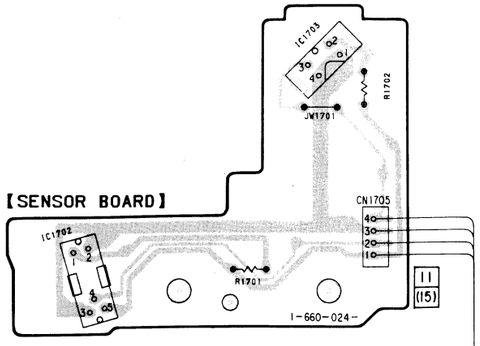
5-7. SCHEMATIC DIAGRAM –CD SECTION–

● Refer to page 33 for Note.

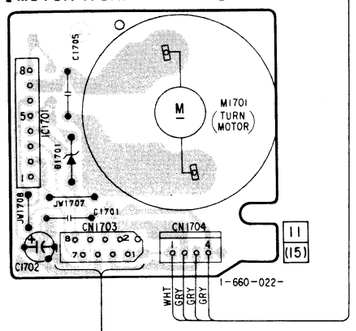
● Refer to page 34 for Waveforms.



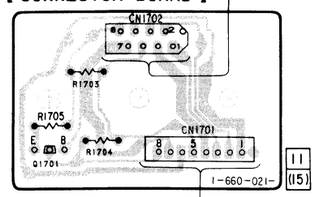
【SENSOR BOARD】



【MOTOR (TURN) BOARD】



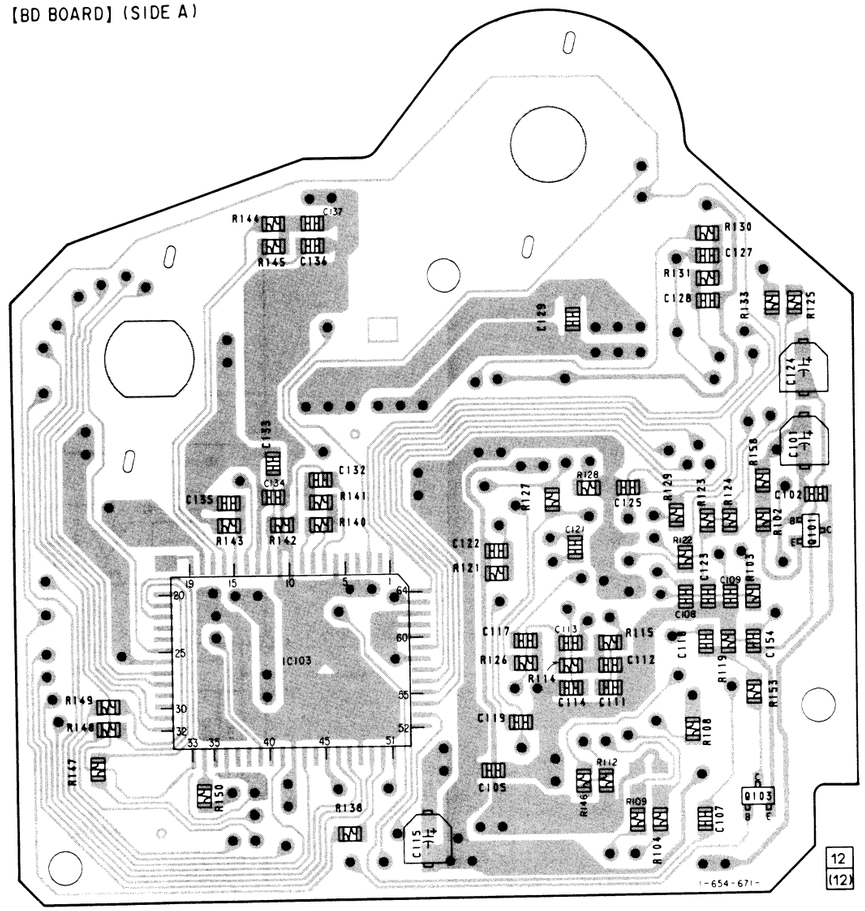
【CONNECTOR BOARD】



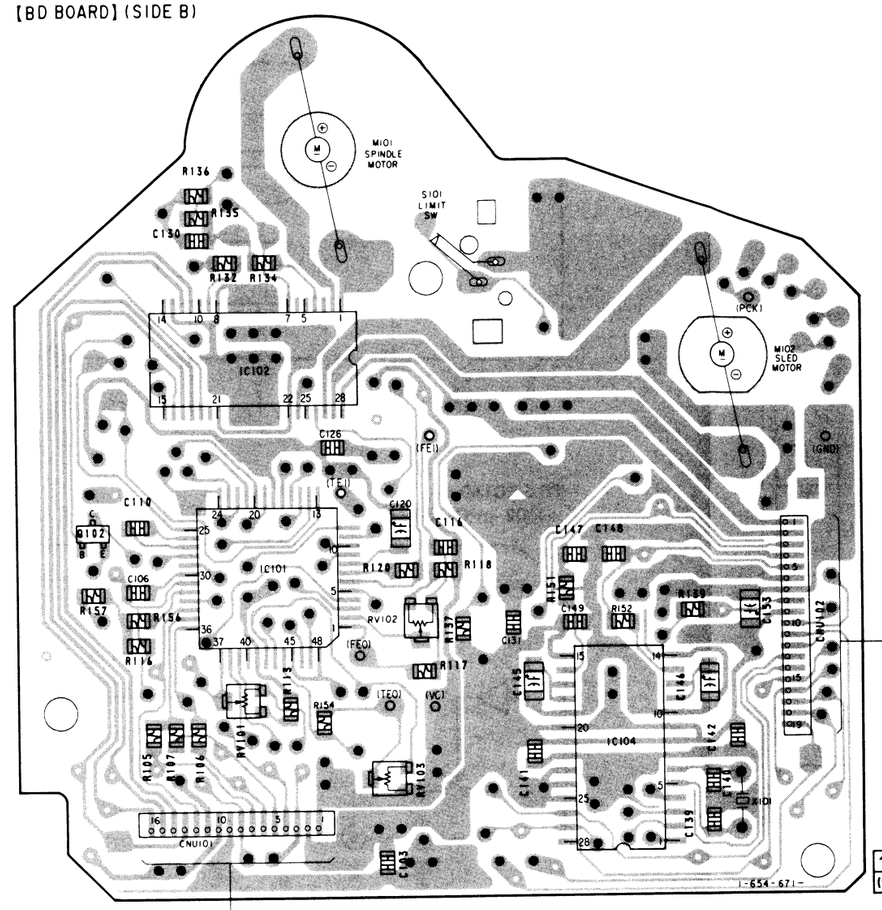
MAIN BOARD
CN103
(Page 17)

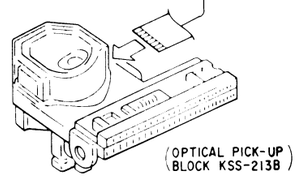
02

【BD BOARD】(SIDE A)



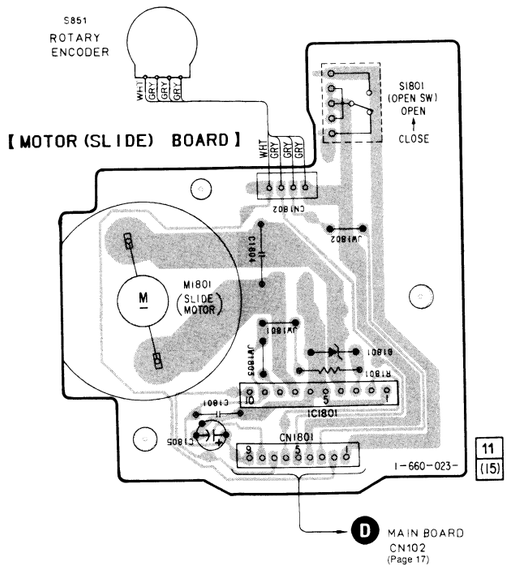
【BD BOARD】(SIDE B)





S851
ROTARY
ENCODER

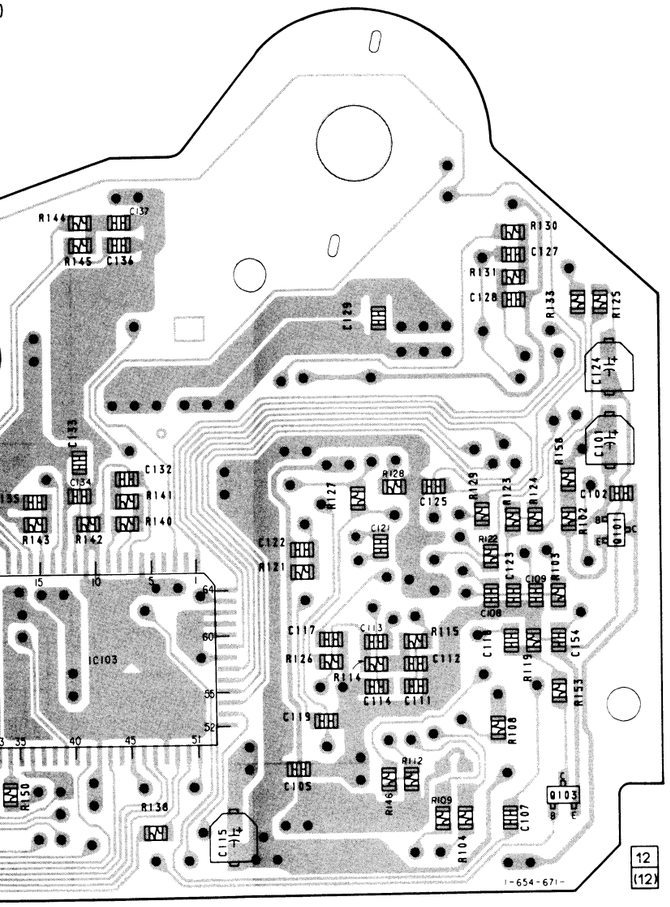
【MOTOR (SLIDE) BOARD】

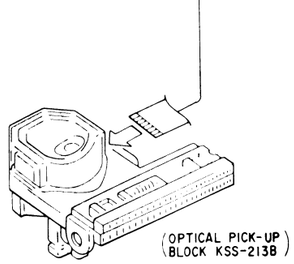


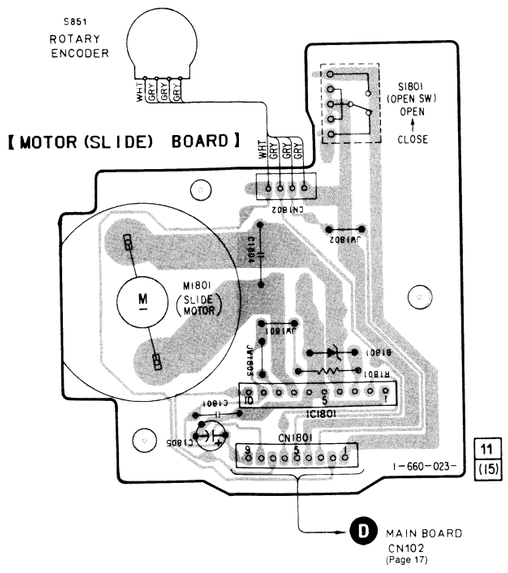
MAIN BOARD
CN102
(Page 17)

7 8 9 10 11 12 13 14 15 16 17

【BD BOARD】(SIDE B)







● SEMICONDUCTOR LOCATION

Ref. No.	Location
D1701	E-2
D1801	J-8
IC101	E-13
IC102	C-13
IC103	E-7
IC104	F-15
IC1701	E-2
IC1702	C-2
IC1703	A-3
IC1801	J-8
Q101	D-10
Q102	D-12
Q103	F-10
Q1701	H-2

Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

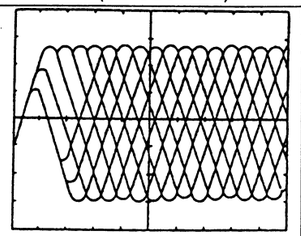
- B+ : B+ Line
- ▭ : adjustment for repair. no mark : CD
- Voltages are taken with a VOM (Input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path. ⇒ : CD

Note:

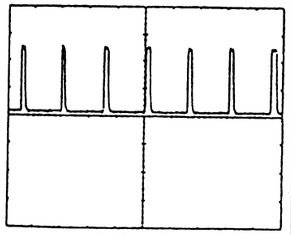
- ○— : parts extracted from the component side.
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen. (The other lagers patterns are not indicated.)

● **WAVEFORMS** (CD SECTION)

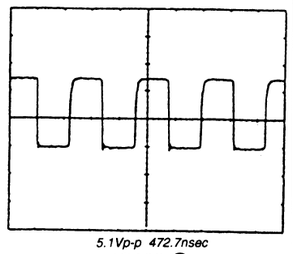
① 1.4Vp-p
IC101 (31)



④ 2.4Vp-p 7.5μsec
IC103 ③

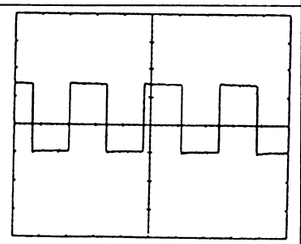


⑦ 5.1Vp-p 472.7nsec
IC103 (22)

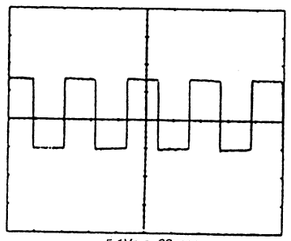


② 8mVp-p 0.2ms/DIV
IC101 (44)

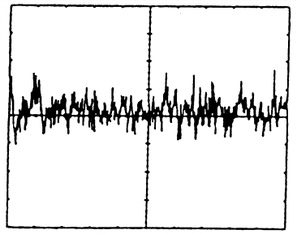
⑤ 5.1Vp-p 137μsec
IC103 (28)



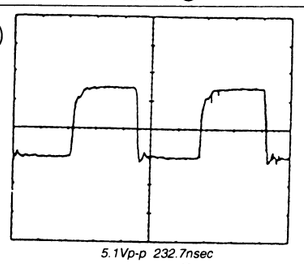
⑧ 5.1Vp-p 23μsec
IC103 (20)



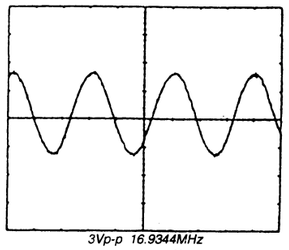
③ 20mVp-p 0.2ms/DIV
IC101 ②



⑥ 5.1Vp-p 232.7nsec
IC103 (25)



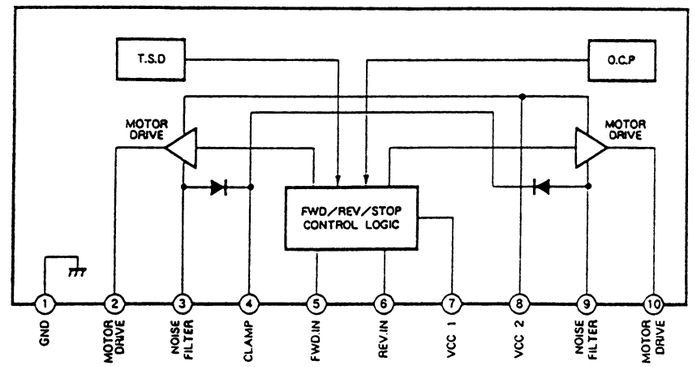
⑨ 3Vp-p 16.9344MHz
IC104 ⑤



5-9. IC BLOCK DIAGRAMS

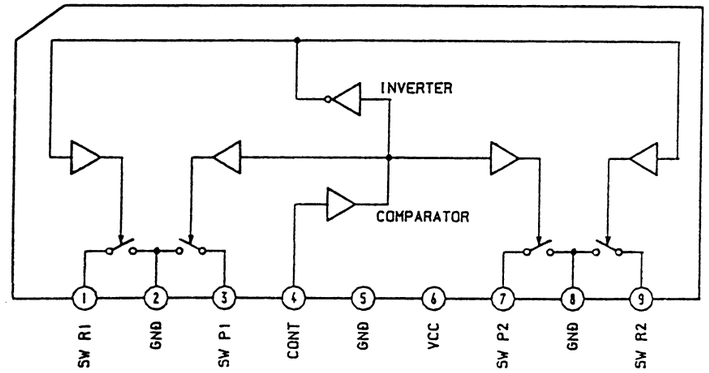
–MAIN SECTION–

IC402 LB1641



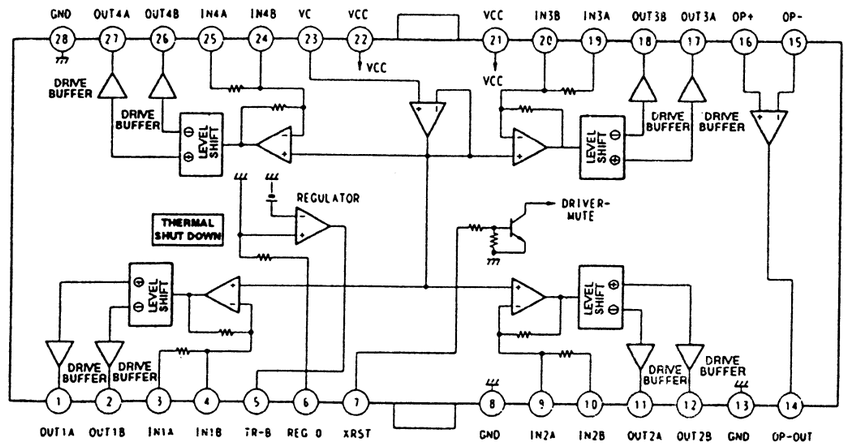
–TC SECTION–

IC602 μPC1330HA

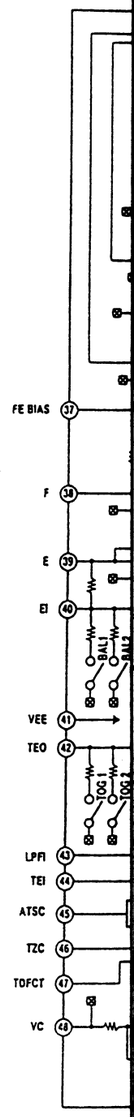


–CD SECTION–

IC102 BA6397FP



IC101 CXA17



72.7nsec
3 (22)

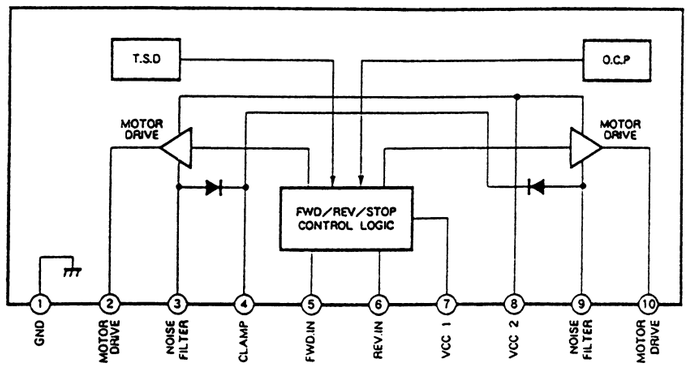
23µsec
3 (20)

344MHz
4 (5)

5-9. IC BLOCK DIAGRAMS

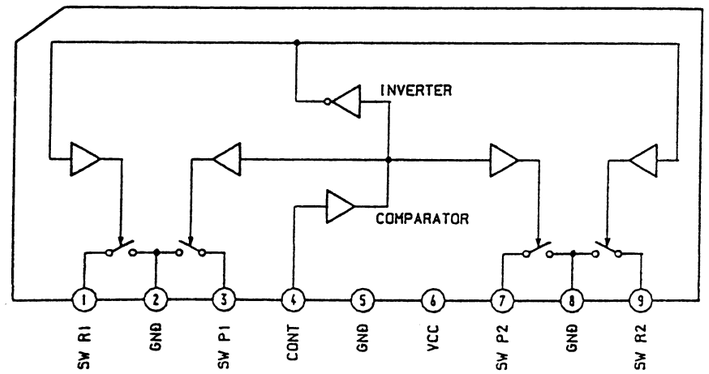
–MAIN SECTION–

IC402 LB1641



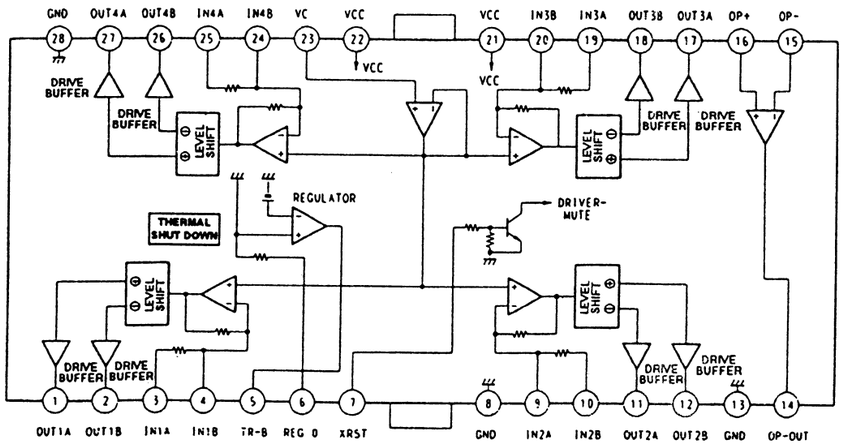
–TC SECTION–

IC602 µPC1330HA

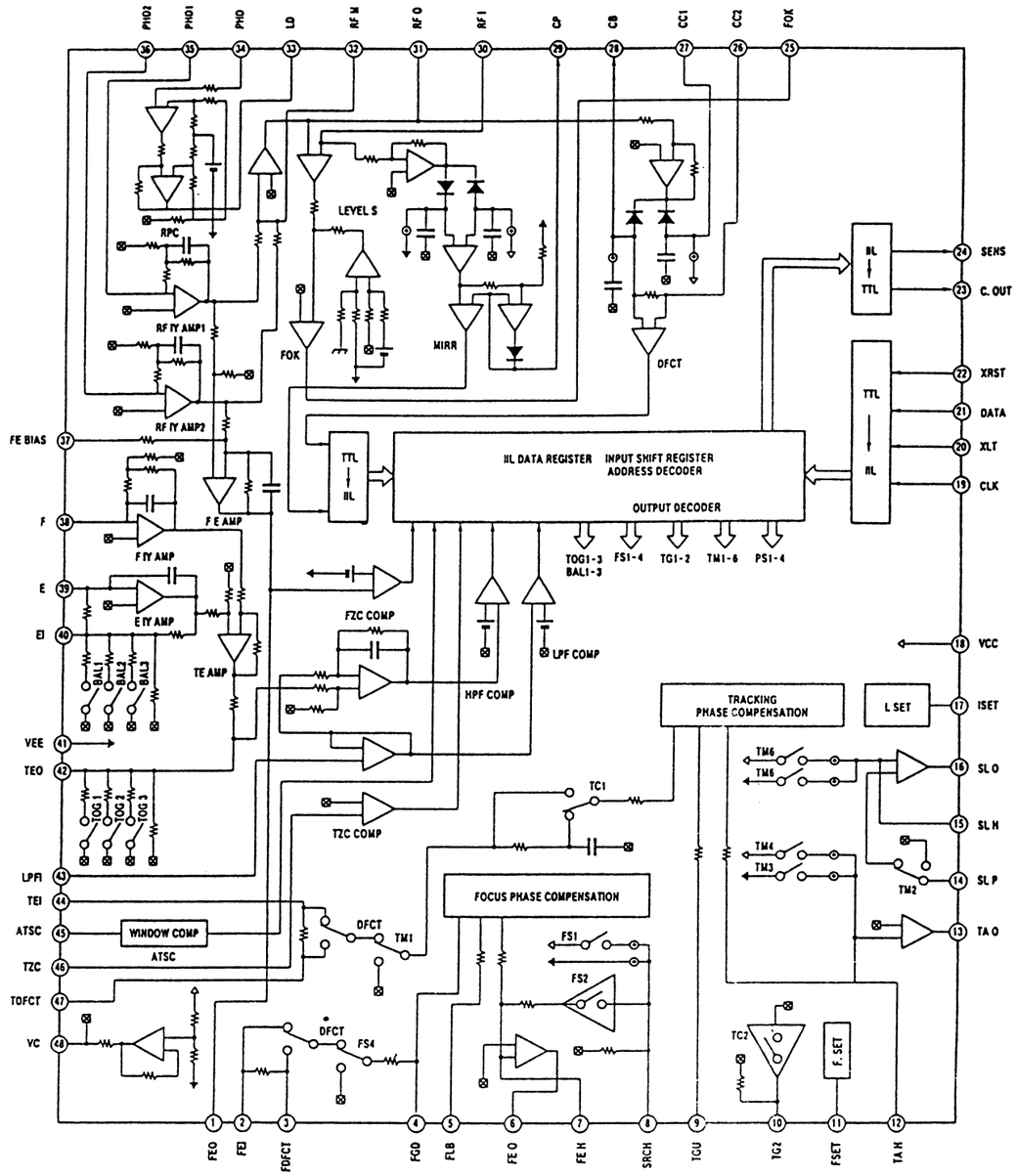


–CD SECTION–

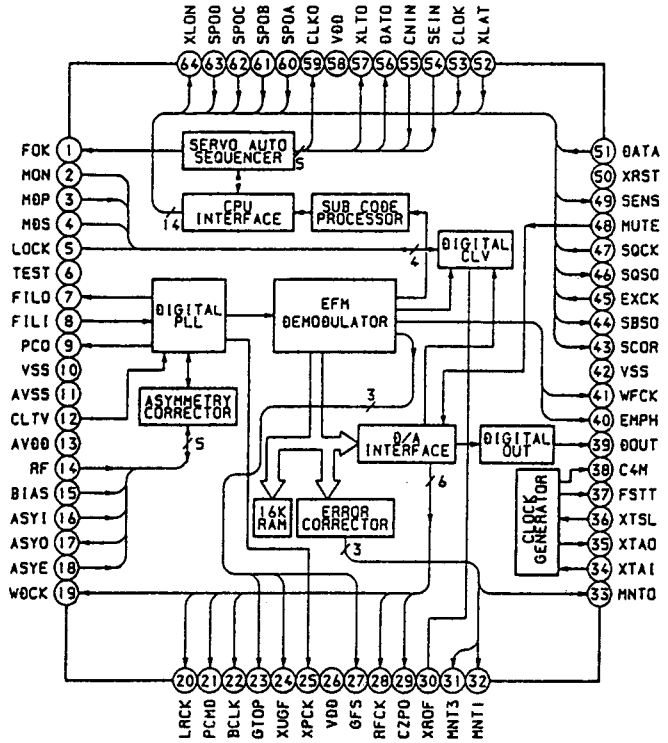
IC102 BA6397FP



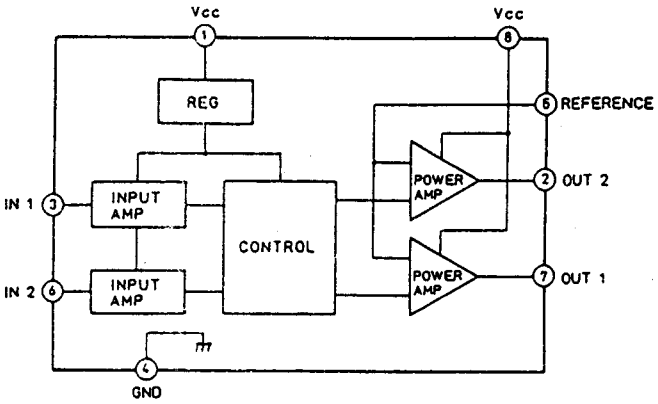
IC101 CXA1782BQ



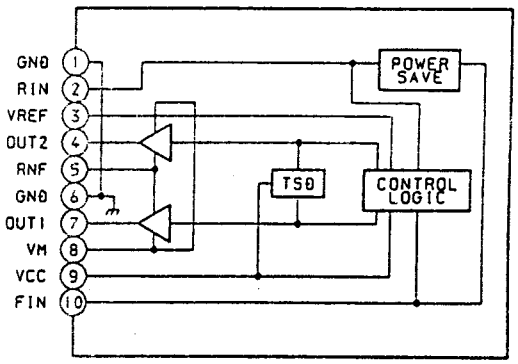
IC103 CXD2507AQ



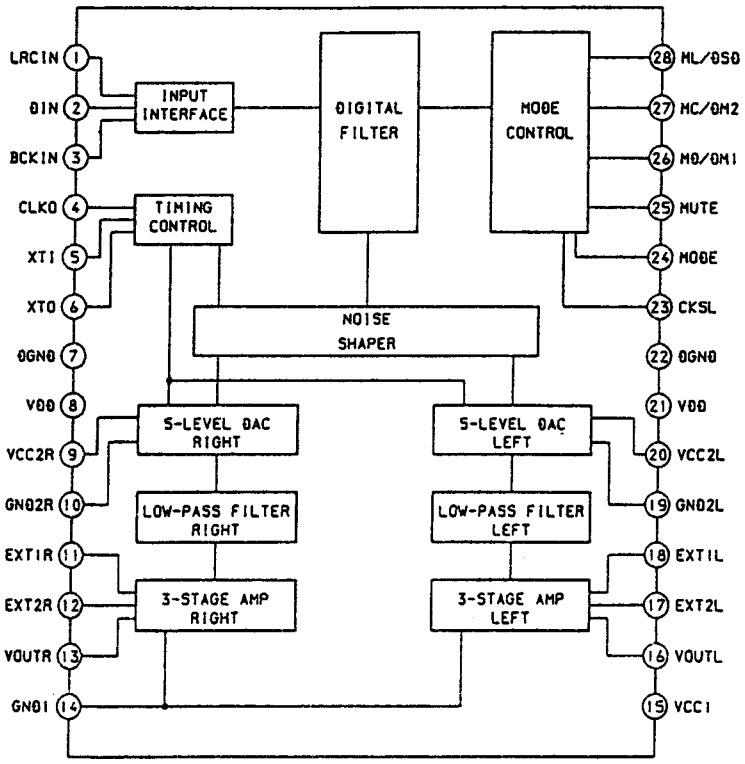
IC701 M54641L



IC801 BA6286N



IC104 PCM1710U-B

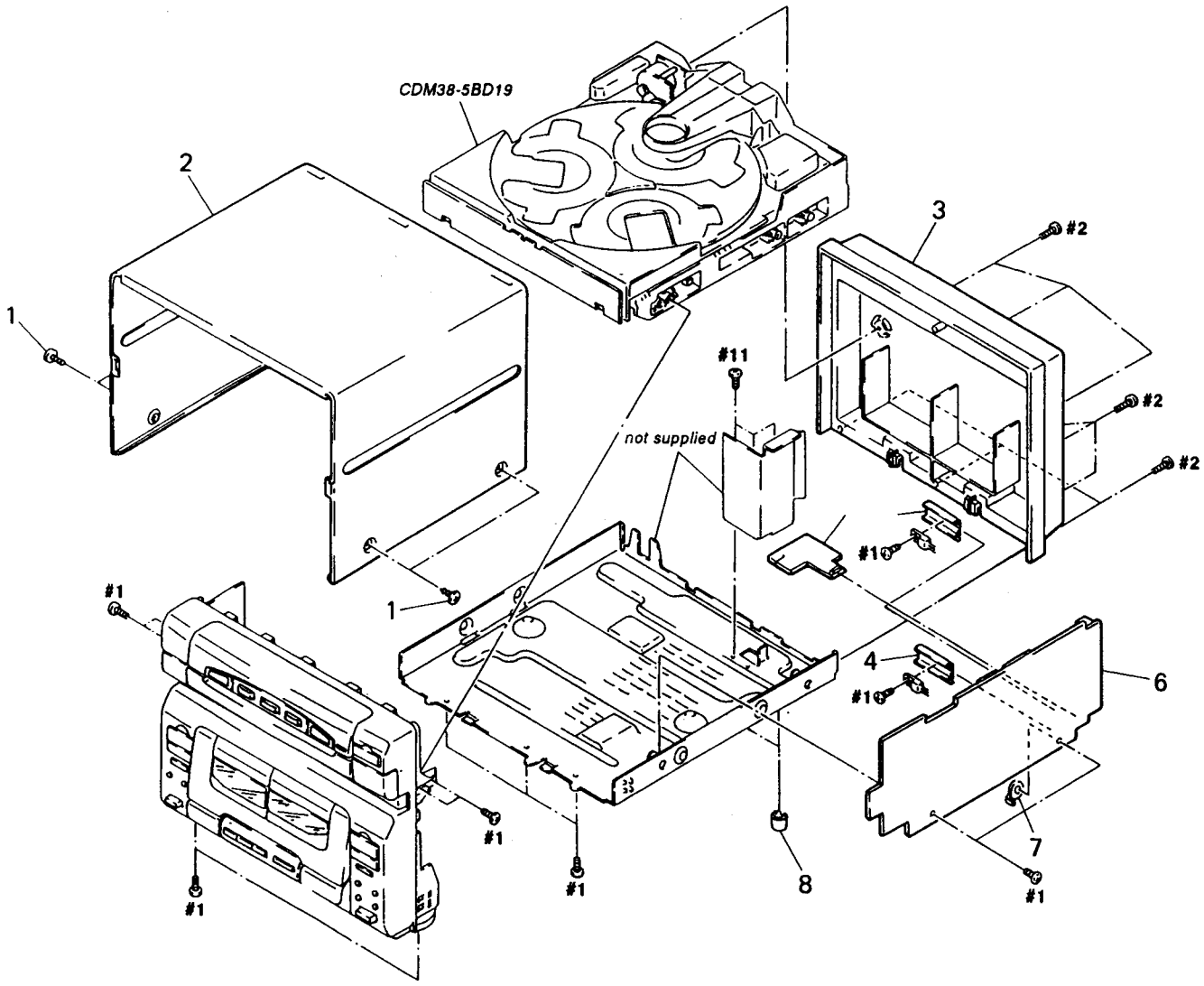


SECTION 6
EXPLODED VIEWS

NOTE :
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

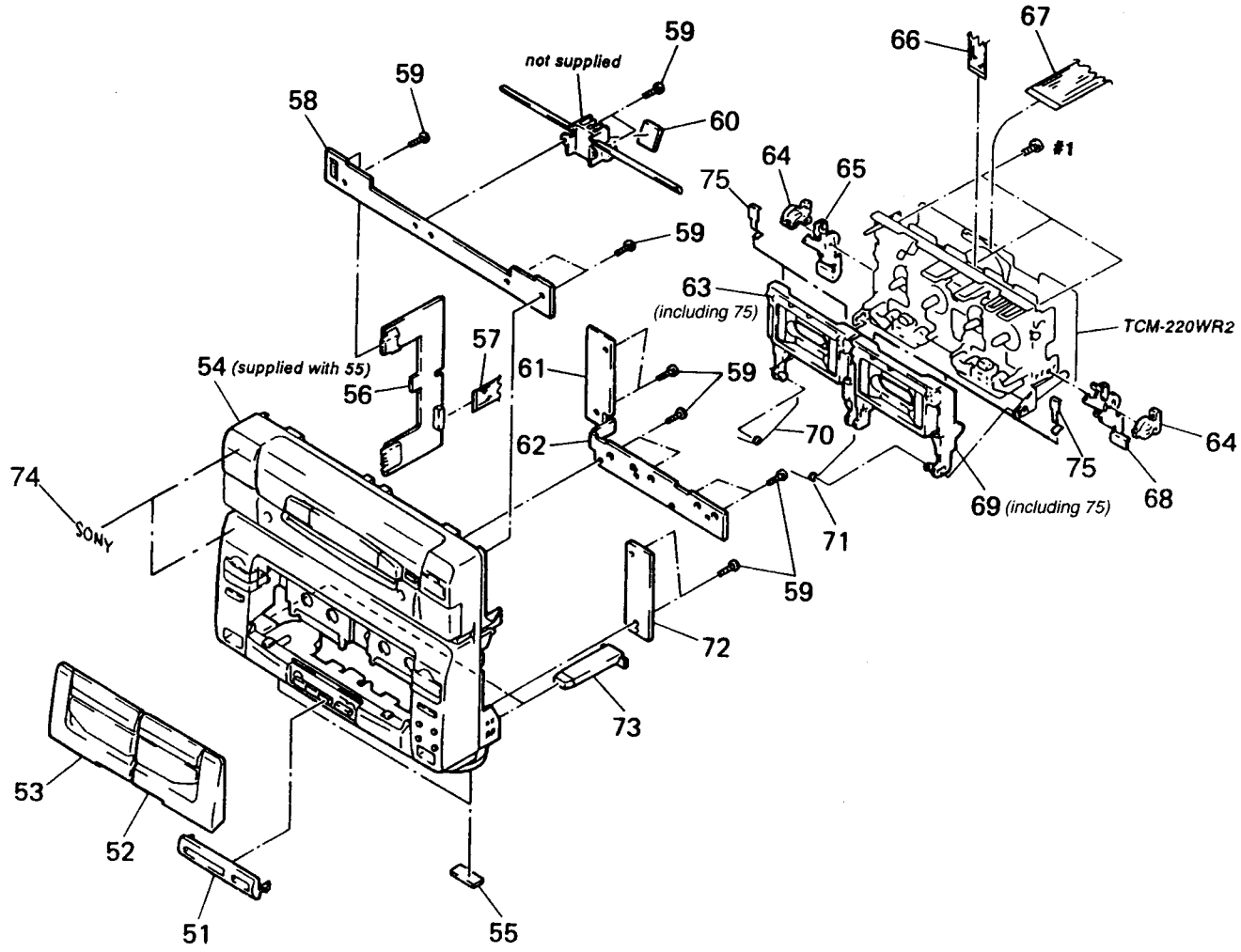
6-1. CHASSIS SECTION



Ref. No.	Part No.	Description	Remark
1	3-704-366-01	SCREW (CASE) (M3X8)	
2	4-979-348-41	CASE	
* 3	4-978-060-01	PANEL, BACK	
* 4	3-309-144-21	HEAT SINK	
* 5	1-658-772-11	LIGHT OUT BOARD	

Ref. No.	Part No.	Description	Remark
* 6	A-4389-342-A	MAIN BOARD, COMPLETE (EXCEPT UK)	
* 6	A-4389-350-A	MAIN BOARD, COMPLETE (UK)	
* 7	4-942-204-01	PLATE, GROUND	
8	4-970-381-01	FOOT (REAR)	

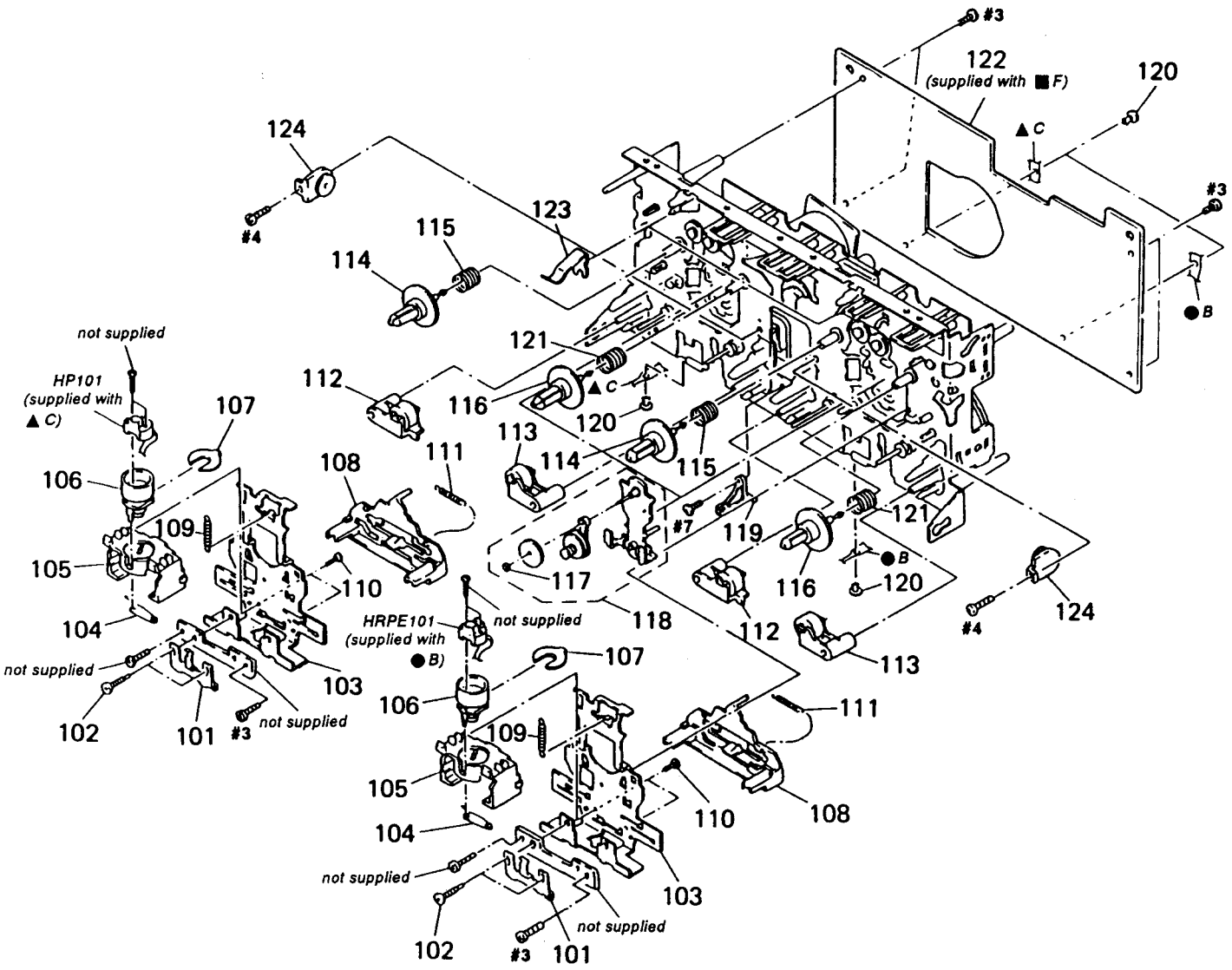
6-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	X-4946-564-1	WINDOW (TCJ) ASSY	
52	X-4946-497-1	LID (B) ASSY, CASSETTE	
53	X-4946-496-1	LID (A) ASSY, CASSETTE	
54	X-4947-108-1	PANEL ASSY, FRONT	
55	4-930-336-21	FOOT (FELT)	
* 56	1-658-770-11	CONNECTION BOARD	
57	1-773-022-11	WIRE (FLAT TYPE) (15 CORE)	
* 58	1-658-767-11	CD SWITCH BOARD	
59	4-951-620-01	SCREW (2.6X8), +BVTP	
* 60	1-659-382-11	LED BOARD	
* 61	1-658-768-11	TC (A) SWITCH BOARD	
* 62	1-658-771-11	TC (P) SWITCH BOARD	
63	X-4947-154-1	HOLDER (L) ASSY, CASSETTE	

Ref. No.	Part No.	Description	Remark
64	3-354-957-01	JOINT (LOCK LEVER)	
* 65	3-354-953-01	LEVER (LOCK LEVER L)	
66	1-769-961-11	WIRE (FLAT TYPE) (11 CORE)	
67	1-773-167-11	WIRE (FLAT TYPE) (21 CORE)	
* 68	3-354-954-01	LEVER (LOCK LEVER R)	
69	X-4947-153-1	HOLDER (R) ASSY, CASSETTE	
70	4-959-231-01	SPRING (L), TORSION	
71	4-959-232-01	SPRING (R), TORSION	
* 72	1-658-769-11	TC (B) SWITCH BOARD	
73	4-978-061-01	BUTTON (E)	
74	4-962-708-01	EMBLEM (4-A), SONY	
75	4-959-229-11	DETENT, CASSETTE	

6-3. TC MECHANISM SECTION - 1
(TCM-220WR2)

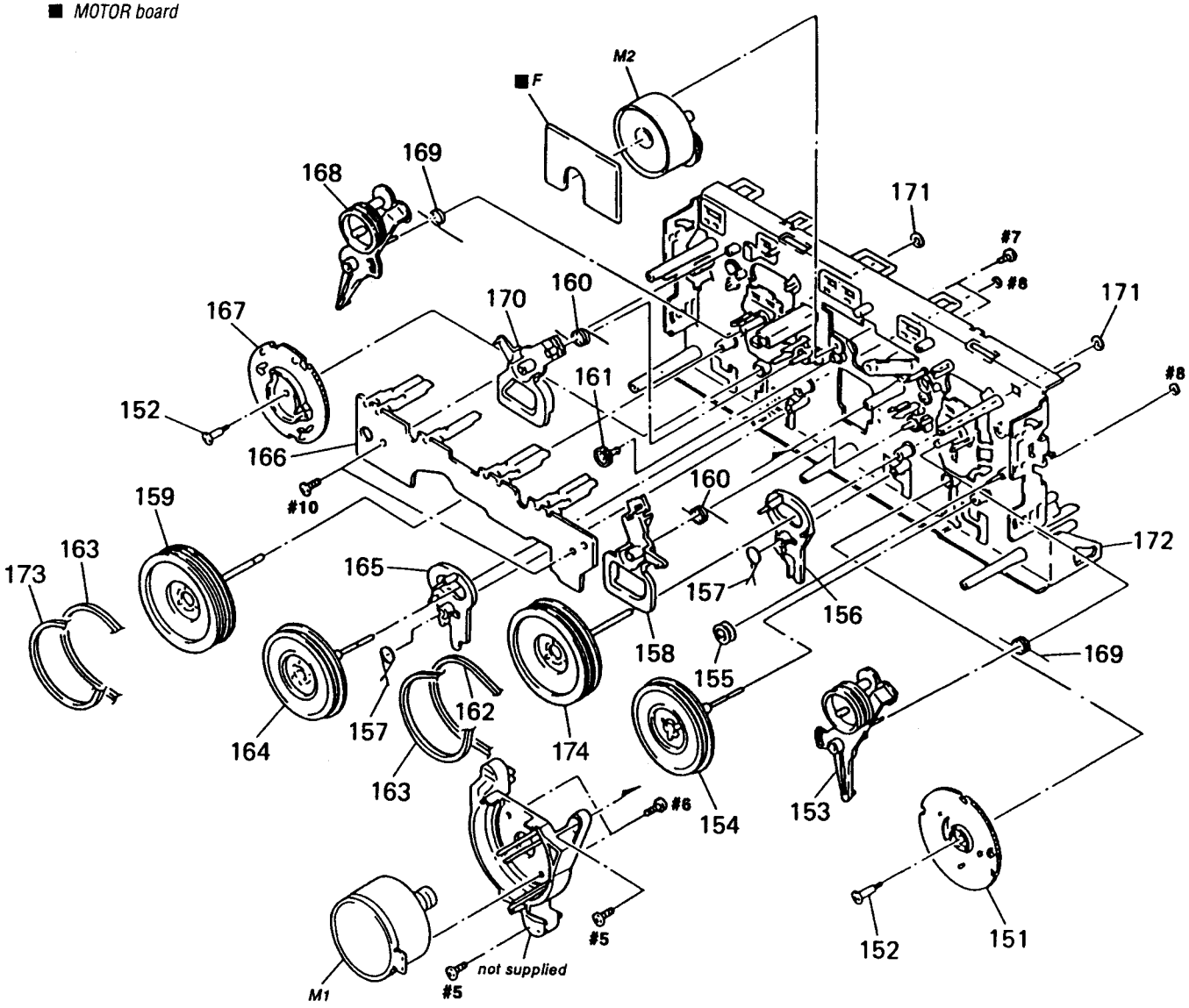


Ref. No.	Part No.	Description	Remark
101	3-908-560-01	SPRING, AZIMUTH ADJUSTMENT	
102	3-919-684-01	SCREW, AZIMUTH ADJUSTMENT	
* 103	X-3367-584-2	SLIDER (HEAD) ASSY	
104	3-908-556-01	SPRING, HEAD TOGGLE	
105	3-908-558-02	FITTING BLOCK, HEAD	
106	3-908-557-02	ROTARY BLOCK, HEAD	
* 107	3-908-559-01	STOPPER, AZIMUTH	
108	3-908-555-01	SLIDER (REV SLIDER)	
109	3-917-143-11	SPRING, TENSION	
110	3-388-848-01	SCREW (P2X6) (B TIGHT)	
111	3-911-113-01	SPRING, TENSION	
112	X-3369-909-1	PINCH LEVER (REV) ASSY	
113	X-3369-908-1	PINCH LEVER (FWD) ASSY	

Ref. No.	Part No.	Description	Remark
114	3-908-613-01	GEAR (S), REEL	
115	3-917-141-01	SPRING, COMPRESSION	
116	X-3371-305-1	REEL (T) ASSY	
117	3-669-465-01	WASHER (1.5), STOPPER	
118	X-3370-173-1	TU ASSY	
* 119	4-980-439-01	FULCRUM, HOLDER	
120	3-911-116-21	RIVET, PUSH	
121	3-917-142-01	SPRING, COMPRESSION	
* 122	A-2007-131-A	AUDIO BOARD, COMPLETE	
123	3-930-972-01	DETENT, HALF	
124	3-354-963-01	DAMPER	
HP101	1-500-093-11	HEAD, MAGNETIC (PLAYBACK)	
HRPE101	1-500-094-11	HEAD, MAGNETIC (REC/PB/ERASE)	

6-4. TC MECHANISM SECTION - 2
(TCM-220WR2)

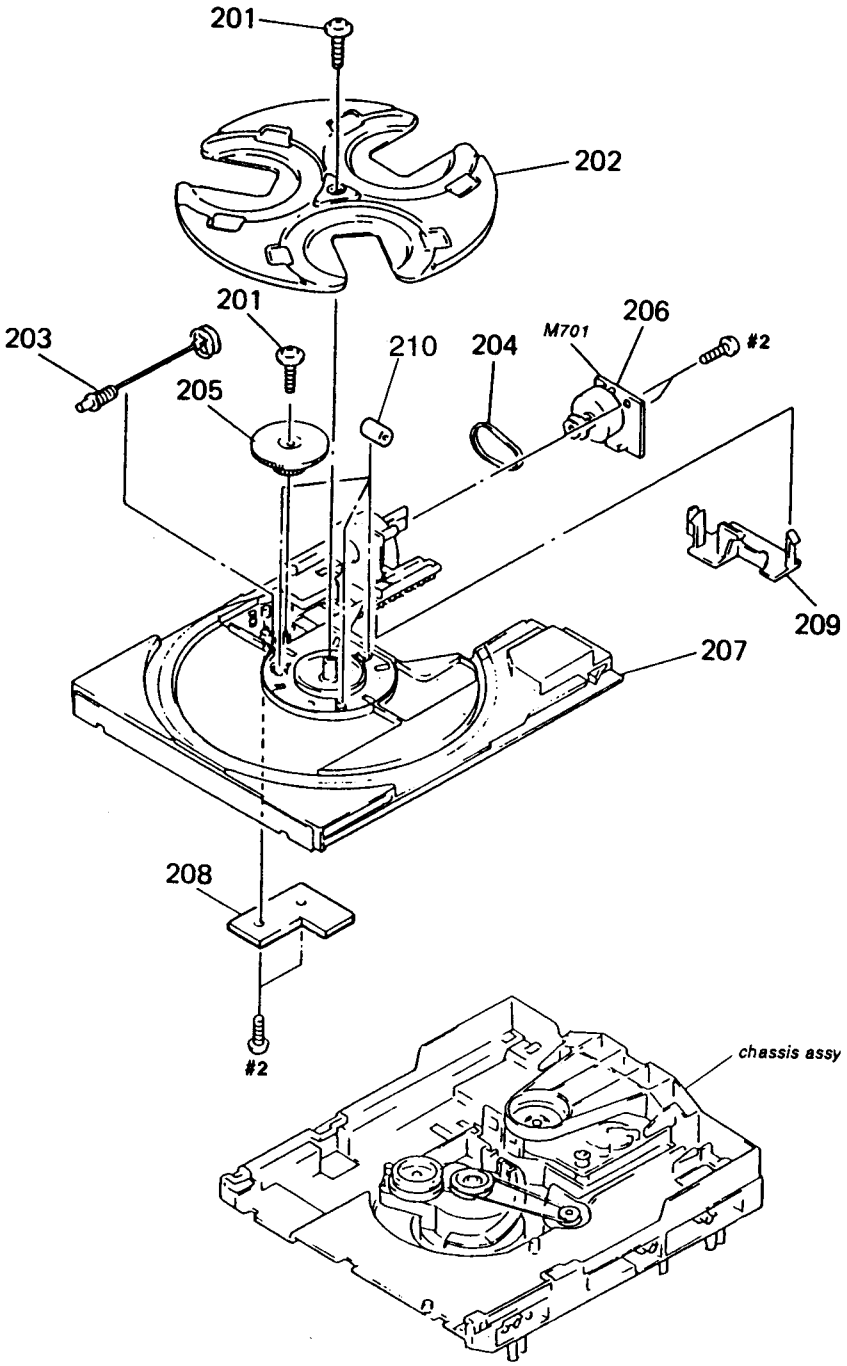
■ *MOTOR board*



Ref. No.	Part No.	Description	Remark
151	3-908-597-01	CAM (A)	
152	3-908-608-11	SCREW, STEP	
153	X-3367-590-2	ARM (A) ASSY, FR	
154	X-3370-169-1	FLYWHEEL (AR) ASSY	
155	3-928-047-01	PULLEY, TENSION	
156	3-908-599-01	LEVER (REV-A)	
157	3-908-601-01	SPRING (REV LEVER), TORSION	
158	3-908-603-01	LEVER (TRIGGER A)	
159	X-3367-593-1	FLYWHEEL (BF) ASSY	
160	3-908-605-01	SPRING (TRIGGER), TORSION	
161	3-908-609-01	GEAR, TRIGGER	
162	3-913-845-11	BELT (A)	
163	3-913-846-11	BELT (FR)	
164	X-3370-171-1	FLYWHEEL (BR) ASSY	

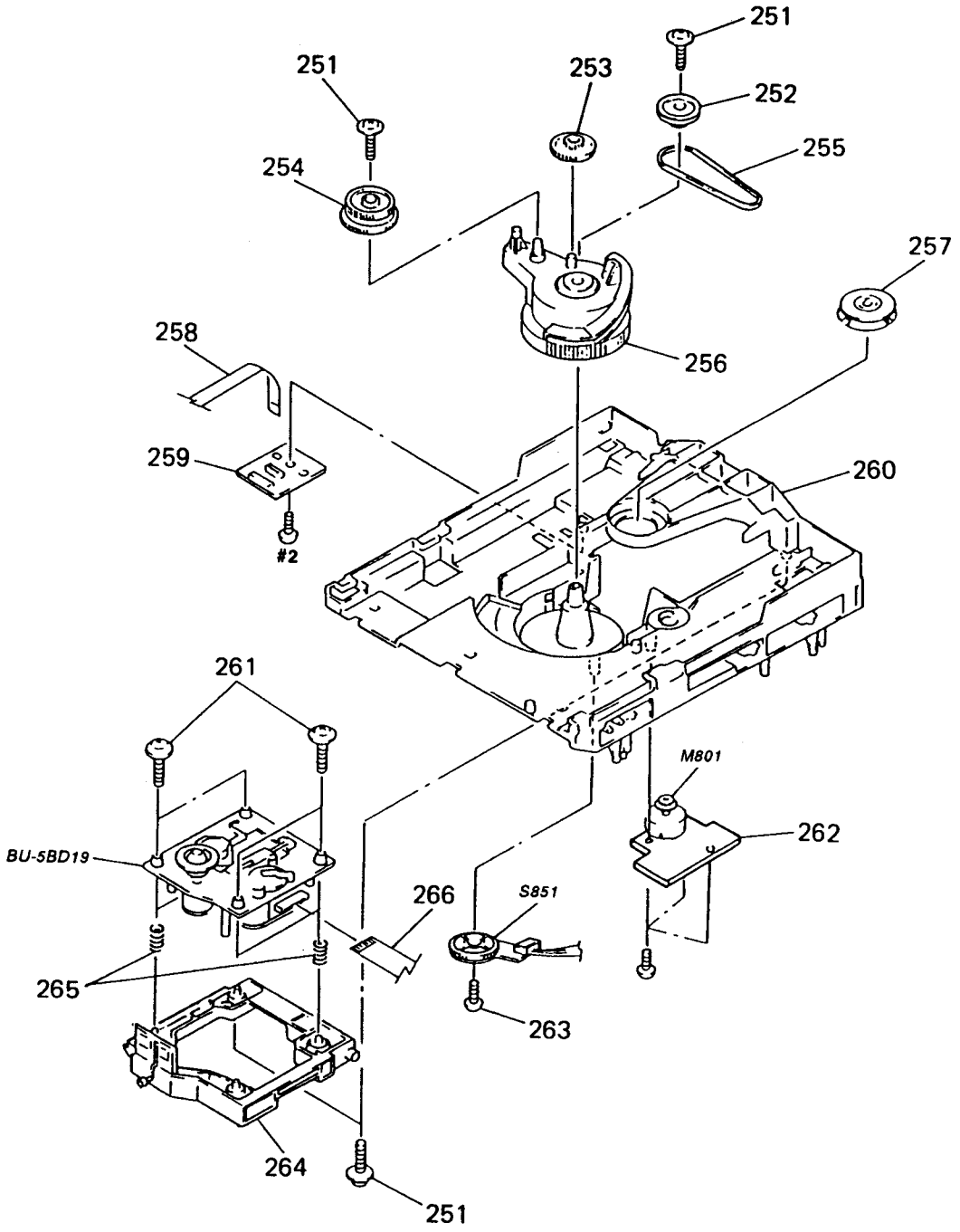
Ref. No.	Part No.	Description	Remark
165	3-908-600-01	LEVER (REV-B)	
* 166	1-650-669-11	LEAF SWITCH BOARD	
167	3-908-598-01	CAM (B)	
168	X-3369-849-2	ARM (B) ASSY, FR	
169	3-914-111-01	SPRING (FR), TORSION	
170	3-908-604-01	LEVER (TRIGGER B)	
171	3-911-115-01	WASHER, STOPPER	
172	X-3371-441-1	CHASSIS ASSY	
173	3-917-176-11	BELT (B)	
174	X-3370-172-1	FLYWHEEL (AF) ASSY	
M1	A-2004-409-A	MOTOR ASSY, CAPSTAN	
M2	A-2004-410-A	MOTOR ASSY, DC (TRIGGER)	

6-5. CD MECHANISM SECTION
(CDM38-5BD19)



Ref. No.	Part No.	Description	Remark
201	4-917-583-21	BRACKET, YOKE	
202	4-977-945-01	TRAY (TURN)	
203	X-4946-295-2	SHAFT ASSY, WORM	
204	4-977-943-01	BELT (TURN) (1.2)	
205	4-977-956-01	WHEEL, WORM	
* 206	1-660-022-11	MOTOR (TURN) BOARD	
207	4-977-944-01	TRAY (SLIDE)	
* 208	1-660-024-11	SENSOR BOARD	
209	4-977-941-01	BEARING (WORM)	
210	X-4924-457-1	ROLLER ASSY	
M701	A-4660-586-A	MOTOR ASSY (TURN MOTOR)	

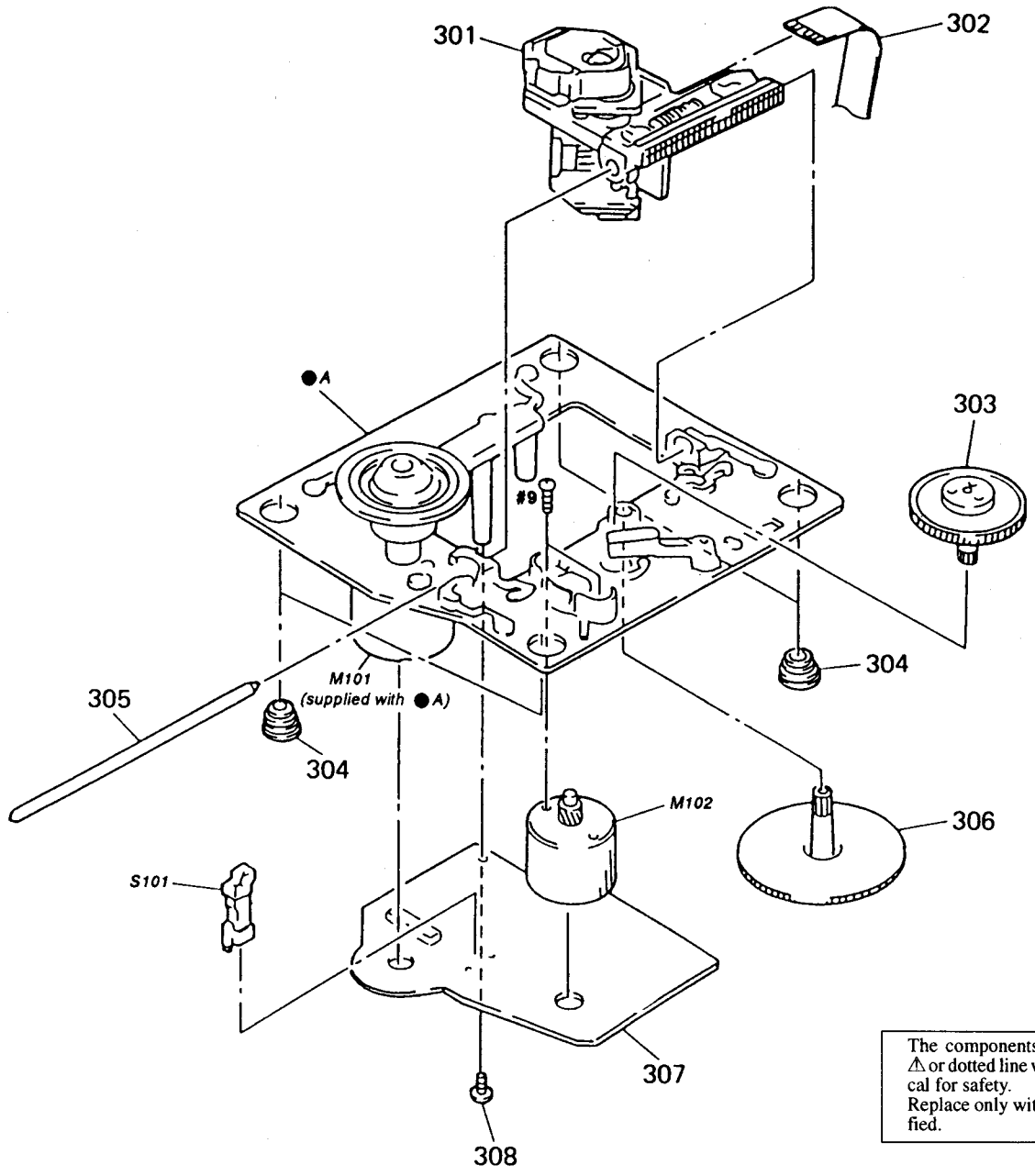
6-6. CHASSIS SECTION (CDM38-5BD19)



Ref. No.	Part No.	Description	Remark
251	4-917-583-21	BRACKET, YOKE	
252	4-977-954-01	PULLEY (SL)	
253	4-977-953-01	GEAR (SL-A)	
254	4-977-955-01	GEAR (SL-B)	
255	4-977-942-01	BELT (SL) (1.4)	
256	X-4946-491-1	CAM ASSY, BU	
257	1-452-824-11	MAGNET	
258	1-776-042-11	WIRE (FLAT TYPE) (8 CORE)	
* 259	1-660-021-11	CONNECTOR BOARD	

Ref. No.	Part No.	Description	Remark
* 260	X-4946-498-1	CHASSIS (CDM) ASSY	
261	4-933-134-01	SCREW (+PTPWH M2.6X6)	
* 262	1-660-023-11	MOTOR (SLIDE) BOARD	
263	4-951-620-41	SCREW (2.6), +BVTP	
264	X-4946-296-1	HOLDER (BU) ASSY	
265	4-982-447-01	SPRING (BU), COMPRESSION	
266	1-776-222-11	WIRE (FLAT TYPE) (19 CORE)	
M801	A-4660-586-A	MOTOR ASSY (SLIDE MOTOR)	
S851	1-473-335-11	ENCODER, ROTARY	

6-7. BASE UNIT SECTION
(BU-5BD19)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠ 301	8-848-367-11	DEVICE, OPTICAL KSS-213B/K-N	
302	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
303	4-917-567-01	GEAR (M)	
304	4-951-940-01	INSULATOR (BU)	
305	4-917-565-01	SHAFT, SLED	
306	4-917-564-01	GEAR (P), FLATNESS	
* 307	A-4673-402-A	BD BOARD, COMPLETE	
308	4-951-620-01	SCREW (2.6X8), +BVTP	
M101	X-4917-523-4	BASE (OUTSERT) ASSY (SPINDLE MOTOR)	
M102	X-4917-504-1	MOTOR ASSY (SLED MOTOR)	
S101	1-572-085-11	SWITCH, LEAF (LIMIT SW)	

SECTION 7
ELECTRICAL PARTS LIST

AUDIO **MOTOR**

NOTE :

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-2007-131-A	AUDIO BOARD, COMPLETE			
		**********			
		MOTOR BOARD			
		**********			
		< CAPACITOR >			
C301	1-162-289-31	CERAMIC	390PF	10%	50V
C302	1-126-968-11	ELECT	100uF	20%	6.3V
C303	1-162-282-31	CERAMIC	100PF	10%	50V
C304	1-107-715-11	ELECT	22uF	20%	16V
C304	1-130-483-00	MYLAR	0.01uF	5%	50V
C305	1-107-715-11	ELECT	22uF	20%	16V
C311	1-162-289-31	CERAMIC	390PF	10%	50V
C313	1-162-282-31	CERAMIC	100PF	10%	50V
C314	1-130-487-00	MYLAR	0.022uF	5%	50V
C315	1-126-233-11	ELECT	22uF	20%	50V
C331	1-137-427-11	FILM	120PF	5%	50V
C332	1-162-288-31	CERAMIC	330PF	10%	50V
C333	1-162-209-31	CERAMIC	27PF	5%	50V
C401	1-162-289-31	CERAMIC	390PF	10%	50V
C402	1-126-968-11	ELECT	100uF	20%	6.3V
C403	1-162-282-31	CERAMIC	100PF	10%	50V
C404	1-130-483-00	MYLAR	0.01uF	5%	50V
C411	1-162-289-31	CERAMIC	390PF	10%	50V
C413	1-162-282-31	CERAMIC	100PF	10%	50V
C414	1-130-487-00	MYLAR	0.022uF	5%	50V
C415	1-126-233-11	ELECT	22uF	20%	50V
C431	1-137-427-11	FILM	120PF	5%	50V
C432	1-162-288-31	CERAMIC	330PF	10%	50V
C433	1-162-209-31	CERAMIC	27PF	5%	50V
C601	1-126-157-11	ELECT	10uF	20%	16V
C602	1-126-157-11	ELECT	10uF	20%	16V
C611	1-124-907-11	ELECT	10uF	20%	50V
C612	1-124-907-11	ELECT	10uF	20%	50V
C621	1-137-150-11	FILM	0.01uF	5%	100V
C622	1-126-961-11	ELECT	2.2uF	20%	50V
C623	1-136-155-00	FILM	0.015uF	5%	50V
C624	1-130-481-00	MYLAR	0.0068uF	5%	50V
C625	1-130-481-00	MYLAR	0.0068uF	5%	50V
C627	1-124-903-11	ELECT	1uF	20%	50V
C628	1-136-153-00	FILM	0.01uF	5%	50V

Ref. No.	Part No.	Description			Remark
C642	1-104-664-11	ELECT	47uF	20%	16V
C651	1-161-494-00	CERAMIC	0.022uF		25V
		< CONNECTOR >			
* CN601	1-568-864-11	SOCKET, CONNECTOR 21P			
* CN602	1-564-718-11	PIN, CONNECTOR (SMALL TYPE) 2P			
* CN651	1-564-521-11	PLUG, CONNECTOR 6P			
		< IC >			
IC601	8-759-111-44	IC uPC4570C-1			
IC602	8-759-143-54	IC uPC1330HA			
IC611	8-759-111-44	IC uPC4570C-1			
		< COIL >			
L331	1-410-780-11	INDUCTOR	27mH		
L431	1-410-780-11	INDUCTOR	27mH		
		< TRANSISTOR >			
Q621	8-729-142-46	TRANSISTOR	2SC2001-LK		
Q622	8-729-142-46	TRANSISTOR	2SC2001-LK		
Q623	8-729-801-93	TRANSISTOR	2SD1387		
Q651	8-729-900-65	TRANSISTOR	DTA144ES		
		< RESISTOR >			
R301	1-247-881-00	CARBON	120K	5%	1/4W
R302	1-249-409-11	CARBON	220	5%	1/4W
R303	1-249-433-11	CARBON	22K	5%	1/4W
R304	1-247-889-00	CARBON	270K	5%	1/4W
R305	1-247-858-11	CARBON	13K	5%	1/4W
R311	1-247-881-00	CARBON	120K	5%	1/4W
R312	1-247-807-31	CARBON	100	5%	1/4W
R314	1-247-882-11	CARBON	130K	5%	1/4W
R315	1-247-850-11	CARBON	6.2K	5%	1/4W
R331	1-249-430-11	CARBON	12K	5%	1/4W
R401	1-247-881-00	CARBON	120K	5%	1/4W
R402	1-249-409-11	CARBON	220	5%	1/4W
R403	1-249-433-11	CARBON	22K	5%	1/4W
R404	1-247-889-00	CARBON	270K	5%	1/4W
R405	1-247-858-11	CARBON	13K	5%	1/4W
R411	1-247-881-00	CARBON	120K	5%	1/4W

AUDIO MOTOR BD

Ref. No.	Part No.	Description			Remark
R412	1-247-807-31	CARBON	100	5%	1/4W
R414	1-247-882-11	CARBON	130K	5%	1/4W
R415	1-247-850-11	CARBON	6.2K	5%	1/4W
R431	1-249-430-11	CARBON	12K	5%	1/4W
R601	1-249-409-11	CARBON	220	5%	1/4W
R602	1-249-409-11	CARBON	220	5%	1/4W
R608	1-249-409-11	CARBON	220	5%	1/4W
R609	1-249-433-11	CARBON	22K	5%	1/4W
R611	1-249-409-11	CARBON	220	5%	1/4W
R612	1-249-409-11	CARBON	220	5%	1/4W
⚠ R621	1-212-851-00	FUSIBLE	5.6	5%	1/4W F
⚠ R622	1-212-851-00	FUSIBLE	5.6	5%	1/4W F
R623	1-249-432-11	CARBON	18K	5%	1/4W
R624	1-249-432-11	CARBON	18K	5%	1/4W
R625	1-249-429-11	CARBON	10K	5%	1/4W
R651	1-247-856-00	CARBON	11K	5%	1/4W
R652	1-247-856-00	CARBON	11K	5%	1/4W
R653	1-249-441-11	CARBON	100K	5%	1/4W
		< VARIABLE RESISTOR >			
RV301	1-238-598-11	RES, ADJ, CARBON 2.2K (PB LEVEL L)			
RV311	1-238-598-11	RES, ADJ, CARBON 2.2K (PB LEVEL L)			
RV341	1-238-551-11	RES, ADJ, CARBON 220K (REC BIAS L)			
RV401	1-238-598-11	RES, ADJ, CARBON 2.2K (PB LEVEL R)			
RV411	1-238-598-11	RES, ADJ, CARBON 2.2K (PB LEVEL R)			
RV441	1-238-551-11	RES, ADJ, CARBON 220K (REC BIAS R)			
RV651	1-238-599-11	RES, ADJ, CARBON 4.7K (TAPE SPEED(NORMAL))			
RV652	1-238-599-11	RES, ADJ, CARBON 4.7K (TAPE SPEED(HIGH))			
		< TRANSFORMER >			
T621	1-423-980-11	TRANSFORMER, BIAS OSCILLATION			

****

*	A-4673-402-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-126-607-11	ELECT CHIP	47uF	20%	4V
C102	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C103	1-164-346-11	CERAMIC CHIP	1uF		16V
C105	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C106	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C107	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C111	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C114	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C117	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C118	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C119	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C120	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C121	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C123	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C124	1-126-607-11	ELECT CHIP	47uF	20%	4V
C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C126	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C127	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C128	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C129	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C130	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C131	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C132	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C133	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C134	1-164-346-11	CERAMIC CHIP	1uF		16V
C135	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C136	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C137	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C139	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C140	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C142	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C145	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C146	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C147	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C148	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C149	1-164-346-11	CERAMIC CHIP	1uF		16V
C153	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C154	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CNU101	1-770-014-11	CONNECTOR, FFC/FPC 16P			
CNU102	1-770-013-11	CONNECTOR, FFC/FPC 19P			
		< IC >			
IC101	8-752-069-56	IC CXA1782BQ			
IC102	8-759-291-06	IC BA6397FP			
IC103	8-752-372-94	IC CXD2507AQ			
IC104	8-759-185-29	IC PCM1710U-B			
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
Q102	8-729-424-08	TRANSISTOR UN2111			
Q103	8-729-421-22	TRANSISTOR UN2211			
		< RESISTOR >			
R102	1-216-001-00	METAL CHIP	10	5%	1/10W
R103	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R104	1-216-097-91	METAL GLAZE	100K	5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R105	1-216-093-00	METAL CHIP	68K	5%	1/10W
R106	1-216-093-00	METAL CHIP	68K	5%	1/10W
R107	1-216-093-00	METAL CHIP	68K	5%	1/10W
R108	1-216-093-00	METAL CHIP	68K	5%	1/10W
R109	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R112	1-216-083-00	METAL CHIP	27K	5%	1/10W
R113	1-216-083-00	METAL CHIP	27K	5%	1/10W
R114	1-216-101-00	METAL CHIP	150K	5%	1/10W
R115	1-216-101-00	METAL CHIP	150K	5%	1/10W
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R117	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R118	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R119	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R120	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R121	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R122	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W
R124	1-216-091-00	METAL CHIP	56K	5%	1/10W
R125	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R126	1-216-063-91	METAL GLAZE	3.9K	5%	1/10W
R127	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R128	1-216-105-91	METAL GLAZE	220K	5%	1/10W
R129	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R130	1-216-079-00	METAL CHIP	18K	5%	1/10W
R131	1-216-079-00	METAL CHIP	18K	5%	1/10W
R132	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R134	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R135	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R137	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R138	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R139	1-216-033-00	METAL CHIP	220	5%	1/10W
R140	1-216-081-00	METAL CHIP	22K	5%	1/10W
R141	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R142	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R143	1-216-121-91	METAL GLAZE	1M	5%	1/10W
R144	1-216-073-00	METAL CHIP	10K	5%	1/10W
R145	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R146	1-216-097-91	METAL GLAZE	100K	5%	1/10W
R147	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R148	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R149	1-216-049-91	METAL GLAZE	1K	5%	1/10W
R150	1-216-037-00	METAL CHIP	330	5%	1/10W
R151	1-216-037-00	METAL CHIP	330	5%	1/10W
R152	1-216-037-00	METAL CHIP	330	5%	1/10W
R153	1-216-082-00	METAL GLAZE	24K	5%	1/10W
R154	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R156	1-216-085-00	METAL CHIP	33K	5%	1/10W
R157	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R158	1-216-001-00	METAL CHIP	10	5%	1/10W

Ref. No.	Part No.	Description			Remark
		< VARIABLE RESISTOR >			
RV101	1-241-396-11	RES, ADJ, METAL GLAZE 22K (FOCUS BIAS)			
RV102	1-241-396-11	RES, ADJ, METAL GLAZE 22K (FOCUS GAIN)			
RV103	1-241-396-11	RES, ADJ, METAL GLAZE 22K(TRACKING GAIN)			
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT SW)			
		< VIBRATOR >			
X101	1-579-280-11	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
*	1-658-767-11	CD SWITCH BOARD			
		**********			
		< CONNECTOR >			
CN255	1-774-341-11	PLUG, CONNECTOR (PC BOARD) 12P			
		< DIODE >			
D270	8-719-052-21	LED	SEL58420C-TP (DISC 1)		
D271	8-719-052-21	LED	SEL58420C-TP (DISC 2)		
D272	8-719-052-21	LED	SEL58420C-TP (DISC 3)		
D273	8-719-052-43	LED	SML59420C-TP4 (▷II)		
D274	8-719-052-21	LED	SEL58420C-TP (DISC 1)		
D275	8-719-052-21	LED	SEL58420C-TP (DISC 2)		
D276	8-719-052-21	LED	SEL58420C-TP (DISC 3)		
		< TRANSISTOR >			
Q270	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q271	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q272	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q273	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q274	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q275	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q276	8-729-119-76	TRANSISTOR	2SA1175-HFE		
Q277	8-729-119-76	TRANSISTOR	2SA1175-HFE		
		< RESISTOR >			
R270	1-247-807-31	CARBON	100	5%	1/4W
R271	1-249-406-11	CARBON	120	5%	1/4W
R272	1-249-406-11	CARBON	120	5%	1/4W
R273	1-249-407-11	CARBON	150	5%	1/4W
R274	1-249-408-11	CARBON	180	5%	1/4W
R275	1-249-409-11	CARBON	220	5%	1/4W
R276	1-249-429-11	CARBON	10K	5%	1/4W
R277	1-249-429-11	CARBON	10K	5%	1/4W
R278	1-249-429-11	CARBON	10K	5%	1/4W
R279	1-249-429-11	CARBON	10K	5%	1/4W
R280	1-247-807-31	CARBON	100	5%	1/4W
R282	1-249-429-11	CARBON	10K	5%	1/4W
R283	1-249-429-11	CARBON	10K	5%	1/4W

CD SWITCH | CONNECTION | CONNECTOR | LEAF SWITCH | LED | LIGHT OUT

Ref. No.	Part No.	Description			Remark
R284	1-249-429-11	CARBON	10K	5%	1/4W
R285	1-249-429-11	CARBON	10K	5%	1/4W
R286	1-247-807-31	CARBON	100	5%	1/4W
R288	1-249-429-11	CARBON	10K	5%	1/4W
R289	1-249-429-11	CARBON	10K	5%	1/4W
R290	1-249-429-11	CARBON	10K	5%	1/4W
R291	1-249-429-11	CARBON	10K	5%	1/4W
R292	1-247-807-31	CARBON	100	5%	1/4W
R294	1-249-429-11	CARBON	10K	5%	1/4W
R295	1-249-429-11	CARBON	10K	5%	1/4W
R296	1-249-429-11	CARBON	10K	5%	1/4W
R297	1-249-429-11	CARBON	10K	5%	1/4W
R298	1-249-409-11	CARBON	220	5%	1/4W
		< SWITCH >			
S270	1-554-303-21	SWITCH, TACTILE (DISK SKIP)			
S271	1-554-303-21	SWITCH, TACTILE (DISC 1)			
S272	1-554-303-21	SWITCH, TACTILE (DISC 2)			
S273	1-554-303-21	SWITCH, TACTILE (DISC 3)			
S274	1-554-303-21	SWITCH, TACTILE (OPEN/CLOSE)			
S275	1-554-303-21	SWITCH, TACTILE (□)			
S276	1-554-303-21	SWITCH, TACTILE (▶II)			

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*	1-658-770-11	CONNECTION BOARD	
		**********	
		< CONNECTOR >	
* CN252	1-569-306-11	SOCKET, CONNECTOR (L TYRE) 15P	
CN253	1-774-335-11	SOCKET, CONNECTOR(PC BOARD)12P	
CN254	1-770-391-11	PIN, CONNECTOR (PC BOARD) 7P	
		< DIODE >	
D201	8-719-987-63	DIODE 1N4148M	
D202	8-719-987-63	DIODE 1N4148M	
D209	8-719-200-82	DIODE 11ES2	

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*	1-660-021-11	CONNECTOR BOARD	
		**********	
		< CONNECTOR >	
* CN1701	1-568-946-11	PIN, CONNECTOR 8P	
CN1702	1-750-413-11	CONNECTOR, FFC/FPC 8P	
		< TRANSISTOR >	
Q1701	8-729-900-80	TRANSISTOR DTC114ES	
		< RESISTOR >	
R1703	1-249-435-11	CARBON 33K	5% 1/4W
R1704	1-249-429-11	CARBON 10K	5% 1/4W
R1705	1-249-417-11	CARBON 1K	5% 1/4W

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Ref. No.	Part No.	Description			Remark
*	1-650-669-11	LEAF SWITCH BOARD			
		**********			
		< CONNECTOR >			
* CN1001	1-568-854-11	SOCKET, CONNECTOR 11P			
		< TRANSISTOR >			
Q1001	8-749-010-90	TRANSISTOR NJL5165KA-H2			
Q1002	8-749-010-90	TRANSISTOR NJL5165KA-H2			
		< RESISTOR >			
R1001	1-249-412-11	CARBON	390	5%	1/4W
R1002	1-249-412-11	CARBON	390	5%	1/4W
R1003	1-249-414-11	CARBON	560	5%	1/4W
R1004	1-247-834-11	CARBON	1.3K	5%	1/4W
R1005	1-247-818-11	CARBON	300	5%	1/4W
		< SWITCH >			
S1001	1-692-832-11	SWITCH, PUSH (1 KEY)(A PLAY)			
S1002	1-692-832-11	SWITCH, PUSH (1 KEY)(B PLAY)			
S1004	1-571-281-21	SWITCH, LEAF (A HALF)			
S1005	1-571-281-21	SWITCH, LEAF (A CrO2)			
S1006	1-572-248-11	SWITCH, LEAF (REC A)			
S1007	1-572-248-11	SWITCH, LEAF (B HALF)			
S1008	1-571-281-21	SWITCH, LEAF (B CrO2)			
S1009	1-571-281-21	SWITCH, LEAF (REC B)			

****

*	1-659-382-11	LED BOARD	
		**********	
		< DIODE >	
D301	8-719-302-07	LED SEL1810A	
D302	8-719-302-07	LED SEL1810A	
D303	8-719-302-07	LED SEL1810A	
D304	8-719-302-07	LED SEL1810A	
		< RESISTOR >	
R301	1-249-401-11	CARBON 47	5% 1/4W
R302	1-249-401-11	CARBON 47	5% 1/4W

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*	1-658-772-11	LIGHT OUT BOARD	
		**********	
		< CONNECTOR >	
CN107	1-770-011-41	CONNECTOR, BOARD TO BOARD 4P	
		< IC >	
IC107	8-749-921-12	IC GP1F32T (CD) (OPTICAL DIGITAL OUT)	

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Ref. No.	Part No.	Description			Remark
*	A-4389-342-A	MAIN BOARD, COMPLETE (EXCEPT UK)			
*	A-4389-350-A	MAIN BOARD, COMPLETE (UK)			
		**********			
*	3-309-144-21	HEAT SINK			
*	4-942-204-01	PLATE, GROUND			
	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S			
		< CAPACITOR >			
C001	1-164-159-11	CERAMIC	0.1uF		50V
C121	1-162-290-31	CERAMIC	470PF	10%	50V
C122	1-162-286-31	CERAMIC	220PF	10%	50V
C123	1-162-290-31	CERAMIC	470PF	10%	50V
C126	1-162-290-31	CERAMIC	470PF	10%	50V
C127	1-162-290-31	CERAMIC	470PF	10%	50V
C128	1-162-306-11	CERAMIC	0.01uF	30%	16V
C129	1-104-665-11	ELECT	100uF	20%	16V
C130	1-162-290-31	CERAMIC	470PF	10%	50V
C131	1-164-159-11	CERAMIC	0.1uF		50V
C132	1-164-159-11	CERAMIC	0.1uF		50V
C133	1-164-159-11	CERAMIC	0.1uF		50V
C135	1-162-294-31	CERAMIC	0.001uF	10%	50V
C136	1-126-927-11	ELECT	2200uF	20%	6.3V
C137	1-126-968-11	ELECT	100uF	20%	6.3V
C139	1-126-233-11	ELECT	22uF	20%	50V
C140	1-164-159-11	CERAMIC	0.1uF		50V
C402	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C403	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C404	1-164-159-11	CERAMIC	0.1uF		50V
C405	1-124-907-11	ELECT	10uF	20%	50V
C407	1-124-902-00	ELECT	0.47uF	20%	50V
C408	1-124-907-11	ELECT	10uF	20%	50V
C409	1-124-907-11	ELECT	10uF	20%	50V
C410	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C411	1-124-907-11	ELECT	10uF	20%	50V
C421	1-124-907-11	ELECT	10uF	20%	50V
C422	1-124-443-00	ELECT	100uF	20%	10V
C423	1-124-443-00	ELECT	100uF	20%	10V
C424	1-164-159-11	CERAMIC	0.1uF		50V
C425	1-164-159-11	CERAMIC	0.1uF		50V
C426	1-164-159-11	CERAMIC	0.1uF		50V
C427	1-126-942-61	ELECT	1000uF	20%	16V
C428	1-104-665-11	ELECT	100uF	20%	16V
C430	1-124-907-11	ELECT	10uF	20%	50V
C431	1-124-907-11	ELECT	10uF	20%	50V
C452	1-162-600-11	CERAMIC	0.0047uF	30%	16V
C453	1-162-302-11	CERAMIC	0.0022uF	30%	16V
C454	1-164-159-11	CERAMIC	0.1uF		50V
C455	1-124-907-11	ELECT	10uF	20%	50V
C457	1-124-902-00	ELECT	0.47uF	20%	50V
C458	1-124-907-11	ELECT	10uF	20%	50V
C459	1-124-907-11	ELECT	10uF	20%	50V
C460	1-162-302-11	CERAMIC	0.0022uF	30%	16V

Ref. No.	Part No.	Description			Remark
C461	1-124-907-11	ELECT	10uF	20%	50V
C702	1-124-907-11	ELECT	10uF	20%	50V
C705	1-162-303-11	CERAMIC	0.0033uF	30%	16V
C752	1-124-907-11	ELECT	10uF	20%	50V
C755	1-162-303-11	CERAMIC	0.0033uF	30%	16V
C813	1-104-664-11	ELECT	47uF	20%	10V
C853	1-126-946-11	ELECT	6800uF	20%	25V
C854	1-124-636-00	ELECT	3300uF	20%	25V
C861	1-126-768-11	ELECT	2200uF	20%	16V
C862	1-124-443-00	ELECT	100uF	20%	10V
C865	1-104-664-11	ELECT	47uF	20%	10V
C866	1-124-443-00	ELECT	100uF	20%	10V
C867	1-104-664-11	ELECT	47uF	20%	10V
C868	1-124-443-00	ELECT	100uF	20%	10V
C869	1-104-664-11	ELECT	47uF	20%	10V
C870	1-164-159-11	CERAMIC	0.1uF		50V
C871	1-164-159-11	CERAMIC	0.1uF		50V
C876	1-126-968-11	ELECT	100uF	20%	6.3V
C4001	1-162-286-31	CERAMIC	220PF	10%	50V
C4002	1-162-286-31	CERAMIC	220PF	10%	50V
C4051	1-162-286-31	CERAMIC	220PF	10%	50V
C4052	1-162-286-31	CERAMIC	220PF	10%	50V
		< CONNECTOR >			
CN101	1-770-167-11	CONNECTOR, FFC/FPC 19P			
* CN102	1-568-936-11	PIN, CONNECTOR 9P			
* CN103	1-568-935-11	PIN, CONNECTOR 8P			
CN151	1-569-624-21	SOCKET, CONNECTOR 17P			
* CN152	1-565-561-11	PIN, CONNECTOR 3P			
CN153	1-566-857-31	SOCKET, CONNECTOR 7P			
CN154	1-770-389-11	PIN, CONNECTOR (PC BOARD) 5P			
CN155	1-569-321-11	SOCKET, CONNECTOR 15P			
CN156	1-770-010-21	CONNECTOR, BOARD TO BOARD 4P			
CN401	1-569-324-11	SOCKET, CONNECTOR 21P			
CN402	1-569-060-11	SOCKET, CONNECTOR 11P			
		< DIODE >			
D105	8-719-987-63	DIODE	1N4148M		
D106	8-719-200-82	DIODE	11ES2		
D107	8-719-987-63	DIODE	1N4148M		
D108	8-719-987-63	DIODE	1N4148M		
D110	8-719-987-63	DIODE	1N4148M		
D111	8-719-987-63	DIODE	1N4148M		
D120	8-719-987-63	DIODE	1N4148M		
D401	8-719-933-54	DIODE	HZS9A2L		
D402	8-719-987-63	DIODE	1N4148M		
D403	8-719-987-63	DIODE	1N4148M		
D404	8-719-987-63	DIODE	1N4148M		
D855	8-719-010-56	DIODE	UZ-8.2BS-TP		
D857	8-719-011-69	DIODE	UZ-5.6BSC-TP		
D858	8-719-010-56	DIODE	UZ-8.2BS-TP		

MAIN

Ref. No.	Part No.	Description	Remark
D901	8-719-200-82	DIODE 11ES2	
D902	8-719-200-82	DIODE 11ES2	
D903	8-719-200-82	DIODE 11ES2	
D904	8-719-200-82	DIODE 11ES2	
		< IC >	
IC101	8-759-395-73	IC TMP87CP64YF-6406	
IC103	8-759-165-82	IC PST600E-T	
IC401	8-759-289-38	IC HA12195NT	
IC402	8-759-822-09	IC LB1641	
IC851	8-759-231-58	IC TA7812S	
IC853	8-759-604-86	IC M5F7807	
		< COIL >	
L401	1-410-482-31	INDUCTOR 100uH	
		< TRANSISTOR >	
Q101	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q105	8-729-118-01	TRANSISTOR 2SB1116	
Q106	8-729-900-80	TRANSISTOR DTC114ES	
Q107	8-729-118-01	TRANSISTOR 2SB1116	
Q108	8-729-900-80	TRANSISTOR DTC114ES	
Q401	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q403	8-729-900-65	TRANSISTOR DTA144ES	
Q404	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q405	8-729-801-93	TRANSISTOR 2SD1387	
Q408	8-729-900-61	TRANSISTOR DTA114ES	
Q409	8-729-900-80	TRANSISTOR DTC114ES	
Q410	8-729-119-76	TRANSISTOR 2SA1175-HFE	
Q411	8-729-900-80	TRANSISTOR DTC114ES	
Q412	8-729-900-65	TRANSISTOR DTA144ES	
Q413	8-729-900-65	TRANSISTOR DTA144ES	
Q414	8-729-900-65	TRANSISTOR DTA144ES	
Q451	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q852	8-729-018-60	TRANSISTOR 2SD2012-LC	
Q854	8-729-209-15	TRANSISTOR 2SD2012	
Q855	8-729-018-59	TRANSISTOR 2SB1375-LC	
Q856	8-729-119-78	TRANSISTOR 2SC2785-HFE	
		< RESISTOR >	
R121	1-247-807-31	CARBON 100 5% 1/4W	
R122	1-247-807-31	CARBON 100 5% 1/4W	
R123	1-247-807-31	CARBON 100 5% 1/4W	
R124	1-247-807-31	CARBON 100 5% 1/4W	
R125	1-247-807-31	CARBON 100 5% 1/4W	
R126	1-247-807-31	CARBON 100 5% 1/4W	
R127	1-247-807-31	CARBON 100 5% 1/4W	
R128	1-247-807-31	CARBON 100 5% 1/4W	
R129	1-247-807-31	CARBON 100 5% 1/4W	
R130	1-247-807-31	CARBON 100 5% 1/4W	

Ref. No.	Part No.	Description			Remark
R131	1-247-807-31	CARBON	100	5%	1/4W
R132	1-247-807-31	CARBON	100	5%	1/4W
R133	1-247-807-31	CARBON	100	5%	1/4W
R134	1-247-807-31	CARBON	100	5%	1/4W
R135	1-247-807-31	CARBON	100	5%	1/4W
R136	1-247-807-31	CARBON	100	5%	1/4W
R137	1-249-421-11	CARBON	2.2K	5%	1/4W
R138	1-249-409-11	CARBON	220	5%	1/4W
R139	1-249-429-11	CARBON	10K	5%	1/4W
R140	1-249-429-11	CARBON	10K	5%	1/4W
R141	1-249-429-11	CARBON	10K	5%	1/4W
R142	1-249-429-11	CARBON	10K	5%	1/4W
R143	1-247-807-31	CARBON	100	5%	1/4W
R144	1-249-437-11	CARBON	47K	5%	1/4W
R145	1-249-437-11	CARBON	47K	5%	1/4W
R146	1-249-429-11	CARBON	10K	5%	1/4W
R147	1-249-429-11	CARBON	10K	5%	1/4W
R148	1-249-429-11	CARBON	10K	5%	1/4W
R149	1-247-807-31	CARBON	100	5%	1/4W
R150	1-247-807-31	CARBON	100	5%	1/4W
R151	1-247-807-31	CARBON	100	5%	1/4W
R152	1-247-807-31	CARBON	100	5%	1/4W
R153	1-247-807-31	CARBON	100	5%	1/4W
R154	1-247-807-31	CARBON	100	5%	1/4W
R155	1-247-807-31	CARBON	100	5%	1/4W
R156	1-247-807-31	CARBON	100	5%	1/4W
R157	1-247-807-31	CARBON	100	5%	1/4W
R158	1-247-807-31	CARBON	100	5%	1/4W
R159	1-249-429-11	CARBON	10K	5%	1/4W
R160	1-247-807-31	CARBON	100	5%	1/4W
R201	1-249-407-11	CARBON	150	5%	1/4W
R202	1-249-407-11	CARBON	150	5%	1/4W
R203	1-249-409-11	CARBON	220	5%	1/4W
R204	1-249-407-11	CARBON	150	5%	1/4W
R205	1-249-407-11	CARBON	150	5%	1/4W
R206	1-249-409-11	CARBON	220	5%	1/4W
R207	1-249-409-11	CARBON	220	5%	1/4W
R208	1-249-409-11	CARBON	220	5%	1/4W
R209	1-249-409-11	CARBON	220	5%	1/4W
R210	1-249-409-11	CARBON	220	5%	1/4W
R211	1-249-409-11	CARBON	220	5%	1/4W
R212	1-249-419-11	CARBON	1.5K	5%	1/4W
R213	1-249-419-11	CARBON	1.5K	5%	1/4W
R214	1-249-419-11	CARBON	1.5K	5%	1/4W
R215	1-247-807-31	CARBON	100	5%	1/4W
R216	1-247-807-31	CARBON	100	5%	1/4W
R217	1-247-807-31	CARBON	100	5%	1/4W
R218	1-247-807-31	CARBON	100	5%	1/4W
R219	1-247-807-31	CARBON	100	5%	1/4W
R220	1-247-807-31	CARBON	100	5%	1/4W
R221	1-249-429-11	CARBON	10K	5%	1/4W
R222	1-249-429-11	CARBON	10K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R223	1-249-429-11	CARBON	10K	5%	1/4W
R224	1-249-429-11	CARBON	10K	5%	1/4W
R225	1-249-429-11	CARBON	10K	5%	1/4W
R226	1-249-429-11	CARBON	10K	5%	1/4W
R401	1-249-430-11	CARBON	12K	5%	1/4W
R402	1-249-431-11	CARBON	15K	5%	1/4W
R403	1-249-427-11	CARBON	6.8K	5%	1/4W
R404	1-249-421-11	CARBON	2.2K	5%	1/4W
R405	1-249-421-11	CARBON	2.2K	5%	1/4W
R406	1-249-417-11	CARBON	1K	5%	1/4W
R407	1-249-425-11	CARBON	4.7K	5%	1/4W
R408	1-249-417-11	CARBON	1K	5%	1/4W
R409	1-249-433-11	CARBON	22K	5%	1/4W
R410	1-249-413-11	CARBON	470	5%	1/4W
R420	1-215-451-00	METAL	18K	1%	1/4W
R421	1-249-429-11	CARBON	10K	5%	1/4W
R422	1-249-429-11	CARBON	10K	5%	1/4W
R423	1-249-429-11	CARBON	10K	5%	1/4W
R424	1-249-429-11	CARBON	10K	5%	1/4W
R425	1-249-429-11	CARBON	10K	5%	1/4W
R426	1-249-429-11	CARBON	10K	5%	1/4W
R427	1-249-429-11	CARBON	10K	5%	1/4W
R428	1-249-429-11	CARBON	10K	5%	1/4W
R429	1-249-429-11	CARBON	10K	5%	1/4W
R430	1-247-866-11	CARBON	30K	5%	1/4W
R431	1-247-882-11	CARBON	130K	5%	1/4W
R432	1-249-429-11	CARBON	10K	5%	1/4W
R433	1-249-425-11	CARBON	4.7K	5%	1/4W
R434	1-249-425-11	CARBON	4.7K	5%	1/4W
R435	1-249-425-11	CARBON	4.7K	5%	1/4W
R436	1-249-417-11	CARBON	1K	5%	1/4W
R437	1-249-436-11	CARBON	39K	5%	1/4W
R438	1-249-436-11	CARBON	39K	5%	1/4W
R439	1-249-437-11	CARBON	47K	5%	1/4W
R440	1-249-437-11	CARBON	47K	5%	1/4W
R442	1-249-413-11	CARBON	470	5%	1/4W
R447	1-249-403-11	CARBON	68	5%	1/4W
R448	1-249-417-11	CARBON	1K	5%	1/4W
R449	1-249-429-11	CARBON	10K	5%	1/4W
R450	1-249-433-11	CARBON	22K	5%	1/4W
R451	1-249-430-11	CARBON	12K	5%	1/4W
R452	1-249-431-11	CARBON	15K	5%	1/4W
R453	1-249-427-11	CARBON	6.8K	5%	1/4W
R454	1-249-421-11	CARBON	2.2K	5%	1/4W
R455	1-249-421-11	CARBON	2.2K	5%	1/4W
R456	1-249-417-11	CARBON	1K	5%	1/4W
R457	1-249-425-11	CARBON	4.7K	5%	1/4W
R458	1-249-417-11	CARBON	1K	5%	1/4W
R459	1-249-433-11	CARBON	22K	5%	1/4W
R460	1-249-425-11	CARBON	4.7K	5%	1/4W
R470	1-249-433-11	CARBON	22K	5%	1/4W
R480	1-247-864-11	CARBON	24K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R481	1-249-409-11	CARBON	220	5%	1/4W
R482	1-249-421-11	CARBON	2.2K	5%	1/4W
R704	1-249-417-11	CARBON	1K	5%	1/4W
R705	1-249-427-11	CARBON	6.8K	5%	1/4W
R754	1-249-417-11	CARBON	1K	5%	1/4W
R755	1-249-427-11	CARBON	6.8K	5%	1/4W
R855	1-249-413-11	CARBON	470	5%	1/4W
R875	1-249-415-11	CARBON	680	5%	1/4W
⚠ R858	1-212-853-00	FUSIBLE	6.8	5%	1/4W F
R859	1-249-417-11	CARBON	1K	5%	1/4W
⚠ R861	1-212-853-00	FUSIBLE	6.8	5%	1/4W F
⚠ R863	1-212-942-00	FUSIBLE	2.2		1/2W F
		< VARIABLE RESISTOR >			
RV401	1-238-600-11	RES, ADJ, CARBON 10K (REC LEVEL L)			
RV451	1-238-600-11	RES, ADJ, CARBON 10K (REC LEVEL R)			
		< VIBRATOR >			
X101	1-579-175-11	VIBRATOR, CERAMIC (10MHz)			
**********					
*	1-660-023-11	MOTOR (SLIDE) BOARD			
		**********			
		< CAPACITOR >			
C1801	1-162-306-11	CERAMIC	0.01uF	30%	16V
C1804	1-162-306-11	CERAMIC	0.01uF	30%	16V
C1805	1-126-964-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
* CN1801	1-568-947-11	PIN, CONNECTOR 9P			
		< DIODE >			
D1801	8-719-109-89	DIODE RD5.6ESB2			
		< IC >			
IC1801	8-759-274-09	IC BA6286N			
		< RESISTOR >			
R1801	1-249-401-11	CARBON	47	5%	1/4W
		< SWITCH >			
S1801	1-762-527-11	SWITCH, ROTARY (OPEN SW)			
**********					
*	1-660-022-11	MOTOR (TURN) BOARD			
		**********			
		< CAPACITOR >			
C1701	1-162-306-11	CERAMIC	0.01uF	30%	16V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

MOTOR (TURN) | SENSOR | TC (A) SWITCH | TC (B) SWITCH | TC (P) SWITCH

Ref. No.	Part No.	Description			Remark
C1702	1-126-964-11	ELECT	10uF	20% 50V	
C1705	1-162-306-11	CERAMIC	0.01uF	30% 16V	
		< CONNECTOR >			
CN1703	1-750-413-11	CONNECTOR, FFC/FPC 8P			
CN1704	1-506-469-11	PIN, CONNECTOR 4P			
		< DIODE >			
D1701	8-719-109-81	DIODE RD4.7ESB2			
		< IC >			
IC1701	8-759-633-65	IC M54641L			
**********					
*	1-660-024-11	SENSOR BOARD			
		**********			
		< IC >			
IC1702	8-749-924-18	IC RPI-1391			
IC1703	8-749-924-30	IC GP2S28			
		< RESISTOR >			
R1701	1-249-416-11	CARBON	820	5% 1/4W	
R1702	1-249-407-11	CARBON	150	5% 1/4W	
**********					
*	1-658-768-11	TC (A) SWITCH BOARD			
		**********			
		< CONNECTOR >			
CN256	1-770-400-11	HOUSING, CONNECTOR(PC BOARD)7P			
		< DIODE >			
D260	8-719-046-43	LED SEL5421E-TP15 (▷)			
D261	8-719-046-43	LED SEL5421E-TP15 (◁)			
		< LEAD, JUMPER >			
* JW301	1-535-730-21	LEAD, JUMPER (OFC)			
* JW302	1-535-730-21	LEAD, JUMPER (OFC)			
* JW303	1-535-730-21	LEAD, JUMPER (OFC)			
* JW304	1-535-730-21	LEAD, JUMPER (OFC)			
		< RESISTOR >			
R260	1-247-807-31	CARBON	100	5% 1/4W	
R261	1-249-406-11	CARBON	120	5% 1/4W	
R262	1-249-406-11	CARBON	120	5% 1/4W	
R263	1-249-407-11	CARBON	150	5% 1/4W	
		< SWITCH >			
S260	1-554-303-21	SWITCH, TACTILE (▷)			
S261	1-554-303-21	SWITCH, TACTILE (◁)			
S262	1-554-303-21	SWITCH, TACTILE (■)			
S263	1-554-303-21	SWITCH, TACTILE (▶▶)			
S264	1-554-303-21	SWITCH, TACTILE (◀◀)			
**********					
*	1-658-769-11	TC (B) SWITCH BOARD			
		**********			
		< CONNECTOR >			
CN251	1-770-398-11	HOUSING, CONNECTOR(PC BOARD)5P			
		< DIODE >			
D251	8-719-046-43	LED SEL5421E-TP15 (◁)			
D252	8-719-046-43	LED SEL5421E-TP15 (▷)			
		< RESISTOR >			
R251	1-247-807-31	CARBON	100	5% 1/4W	
R252	1-249-406-11	CARBON	120	5% 1/4W	
R253	1-249-406-11	CARBON	120	5% 1/4W	
R254	1-249-407-11	CARBON	150	5% 1/4W	
R255	1-249-408-11	CARBON	180	5% 1/4W	
R256	1-249-409-11	CARBON	220	5% 1/4W	
		< SWITCH >			
S251	1-554-303-21	SWITCH, TACTILE (◁)			
S252	1-554-303-21	SWITCH, TACTILE (▷)			
S253	1-554-303-21	SWITCH, TACTILE (■)			
S254	1-554-303-21	SWITCH, TACTILE (▶▶)			
S255	1-554-303-21	SWITCH, TACTILE (◀◀)			
S256	1-554-303-21	SWITCH, TACTILE (DIRECTION)			
S257	1-554-303-21	SWITCH, TACTILE (DOLBY NR)			
**********					
*	1-658-771-11	TC (P) SWITCH BOARD			
		**********			
		< DIODE >			
D262	8-719-046-36	LED SEL5921A-TH15 (PAUSE)			
		< LEAD, JUMPER >			
* JW305	1-535-730-21	LEAD, JUMPER (OFC)			
* JW306	1-535-730-21	LEAD, JUMPER (OFC)			
* JW307	1-535-730-21	LEAD, JUMPER (OFC)			
* JW308	1-535-730-21	LEAD, JUMPER (OFC)			
		< RESISTOR >			
R264	1-249-408-11	CARBON	180	5% 1/4W	
R265	1-249-409-11	CARBON	220	5% 1/4W	
R266	1-249-410-11	CARBON	270	5% 1/4W	
R267	1-249-411-11	CARBON	330	5% 1/4W	

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
S265	1-554-303-21	SWITCH, TACTILE (CD SYNCHRO)	
S266	1-554-303-21	SWITCH, TACTILE (HI-SPEED DUBBING)	
S267	1-554-303-21	SWITCH, TACTILE (● REC)	
S268	1-554-303-21	SWITCH, TACTILE (PAUSE)	
**********			
		MISCELLANEOUS	
		**********	
57	1-773-022-11	WIRE (FLAT TYPE) (15 CORE)	
66	1-769-961-11	WIRE (FLAT TYPE) (11 CORE)	
67	1-773-167-11	WIRE (FLAT TYPE) (21 CORE)	
257	1-452-824-11	MAGNET	
258	1-776-042-11	WIRE (FLAT TYPE) (8 CORE)	
266	1-776-222-11	WIRE (FLAT TYPE) (19 CORE)	
⚠ 301	8-848-367-11	DEVICE, OPTICAL KSS-213B / K-N	
302	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
HP101	1-500-093-11	HEAD, MAGNETIC (PLAYBACK)	
HRPE101	1-500-094-11	HEAD, MAGNETIC (REC/PB/ERASE)	
M1	A-2004-409-A	MOTOR ASSY, CAPSTAN	
M2	A-2004-410-A	MOTOR ASSY, DC (TRIGGER)	
M101	X-4917-523-4	BASE (OUTSERT)ASSY (SPINDLE MOTOR)	
M102	X-4917-504-1	MOTOR ASSY (SLED MOTOR)	
M701	A-4660-586-A	MOTOR ASSY	
M801	A-4660-586-A	MOTOR ASSY (SLIDE MOTOR)	
S851	1-473-335-11	ENCODER, ROTARY	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-501-721-11	ANTENNA (LOOP)	
	3-800-829-31	MANUAL, INSTRUCTION (ENGLISH)(UK)	
	3-800-829-41	MANUAL, INSTRUCTION (ENGLISH,FRENCH, SPANISH,PORTUGUESE)(AEP)	
	3-800-829-51	MANUAL, INSTRUCTION (GERMAN,DUTCH, ITALIAN)(AEP,Italian)	
	3-800-829-61	MANUAL, INSTRUCTION (GERMAN)(German)	
	3-800-829-71	MANUAL, INSTRUCTION (DANISH,FINNISH, SWEDISH)(AEP)	
*	4-979-071-01	CUSHION (HTC) (FRONT)	
*	4-979-072-01	CUSHION (HTC) (REAR)	
*	4-980-778-01	CARTON, INDIVIDUAL	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#3	7-685-131-19	SCREW +BTP 2.6X4 TYPE2 N-S	
#4	7-621-770-67	SCREW +BVTT 2.6X6 (S)	
#5	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#6	7-621-775-10	SCREW +B 2.6X4	
#7	7-621-775-00	SCREW +B 2.6X3	
#8	7-623-921-01	RING, RETAINING, CAPSTAN	
#9	7-621-255-15	SCREW +P 2X3	
#10	7-685-533-19	SCREW +BTP 2.6X6 TYPE2 N-S	
#11	7-685-871-01	SCREW +BVTT 3X6 (S)	

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